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Work Suggests New Committee of Nine To Draft Oil Conservation Bill

Staff Special
BUFFALO, N. Y., Aug. 30

THE government favors legislation to provide for conservation of petroleum, Secretary of the Interior Hubert Work indicated here today before the mineral section of the American Bar Association convention. Such legislation should be enacted to protect oil deposits against waste in production and the public against future high prices for oil products.

Secretary Work in a prepared address made no specific recommendations that should be incorporated in legislation but following his speech he made a supplementary statement in which he recommended the appointment of a Committee of nine to draft a bill to be studied and checked by the Federal Oil Conservation Board and which may be submitted to the Congress that convenes in December.

Three of the members of this committee, he suggested, should be eminent members of the American Bar Association, three should be practical petroleum engineers, and three representatives of the government. His supplementary statement follows:

"The approach toward effecting ways and means for the accomplishment of conservation seems to require complete publicity of an industry's activities as the price of greater freedom of action. What is needed is not government interfering with business nor business meddling with government, but government helping industry for its own and the public good. To that end, I ask that you contribute to national conservation the legal advice it sorely needs.

"A suggestion to leave with you; I believe the time has arrived when the federal government should ask congress for legislation intended to protect our oil deposits against waste in production, and the public against future high cost of oil products. Never in our national history was the need for conserving in the ground our petroleum resources more apparent than now.

"The constituting of a Committee of Nine, three of its ablest members selected by the American Bar Association, three practical engineers from the oil industry, with three representatives of the government, to draft a bill for the Federal Oil Conservation Board to study and recheck, with a view to its introduction into the seventieth Congress, would seem desirable. Through such procedure we will have unity in thought, action and legislation in the interests of economic production and consumption of our greatest natural resource, which has become the world's dominant factor in the economic, industrial and social life of our modern civilization."

IN HIS main address Secretary Work said there should be no "hazarding of the future safety of the nation for any mere present day advantage." He likened the present rush to develop flush pools quickly to a civil war. Keen competition was injuring millions of persons who have invested in oil properties, he said, citing a decline of $500,000,000 in the market value of oil stocks on the New York Exchange since the peak of 1926. Surplus oil, he declared, should be kept in the original container—underground.

Full Text of Secretary Work's Address on Conservation

CONSERVATION in recent years has lost much of its theoretical flavor and is now understood as having to do with everyday life. In simple terms, conservation is taking thought for the morrow—a forward-looking, constructive process. Our fathers were conservationists without knowing the word, for most that we cherish in our American heritage has come down to us as the product of wise planning by those who settled the country, laid out its transportation routes, planned its cities, built its industries, and above all gave us our constitution and laws. Forward-looking builders were those early Americans.

Conservation in the sense of planning in terms of material resources, however, has now taken on new meaning and acquired greater emphasis because we are living in a time of increasing dependence upon raw materials. The present-day civilization makes so great demands on fuels and metals and a score of other raw materials that the nation needs to balance its accounts and see how long the Natural Reserve Bank can continue to honor its regular drafts. It is the wise nation that thinks of future needs and therefore lives within its means.

Nature has been so generous with these United States—the most favored of all nations—that we have simply left it to our geologists and engineers to find and put to use our great stores of treasure. Yet the activities of the engineer who deals with natural forces and natural resources for the use of man are subject to man-made

law as well as to natural law. With the speeding up of life more attention must be given to its control.

A new phrase recently came across the Atlantic from Geneva—"the rationalization of industrial production." Whether or not new words are needed, a comparatively new idea seems to be winning world-wide attention and that idea is the general adoption of more efficient technical methods and improved mechanical devices. The almost phenomenal speed with which this idea is spreading, with America as the cyclonic center, forces upon us the consideration of the economic, political and legal phases of productive business. This is why conservation is a national policy and as a practical problem impels the attention of every citizen: landowner, engineer, business man, lawmaker and consumer.

CONSERVATION may be likened to an insurance policy guaranteeing the nation's future supply of needed raw materials and underwriting the future prices for these essential commodities. Supply and price to a large extent make up one problem—at least they can be regarded as interdependent. Adequate supply is the more important but reasonable price may be uppermost in the popular mind. But we need only to reflect to realize that price often conditions supply, while supply also determines price. Conservation comprehends both in its outlook upon the future, for it seeks to equalize supply and stabilize prices, harmonizing present and future. In conservation, as I see it, there is no hazarding the future safety of the nation for any mere present day advantage, nor, on the other hand, should we suffer any utter sacrifice of the present in favor of the future. There can be and should be a rational balancing of present and future advantages. In all respects conservation makes its appeal to reason and is a policy that should win the support of men of affairs. It is a practical policy in the nation's business.

Oil conservation is perhaps the phase of conservation that possesses the most news value just now. And oil conservation is typical of the whole problem of resources-planning. At present, oil is being produced on a scale never before reached. A civil war of intense competition is today producing a waste problem in the oil industry so big that it is national in extent and interest. Unless the industry is able to co-operate, huge losses are inevitable. Statistics of a somewhat reliable nature indicate a decline since the peak in 1926 of over $500,000,0000 in the market value of the oil company stocks represented on the New York Stock Exchange. Some indicate that losses to the industry as a whole will total nearly a billion dollars. I do not vouch for these figures, but they are ventured by men in the industry who are presumed to keep in intimate touch with actual industrial conditions.

Tremendous losses suffered by the oil industry similarly affect the general public. For practically all the large producing and refining companies are today owned not by a handful of wealthy men, but by hundreds of thousands of individual stockholders scattered throughout the country. I am informed that stockholders, bondholders and owners of royalties on oil production number approximately 1,500,000. Stockholders and bondholders alone number 1,450,000. This vast army of investors represent citizens of both sexes in all strata of our society. They are school teachers, clerks, laborers, professional men and women. In many instances their holdings represent their life's savings. So, when a great institution like the oil industry slumps, the burden is not carried so much by officials and directors as by the small individual stockholders.

THINK of the marvelous growth of this industry. Less than 70 years ago the first well struck oil at 68 feet; today wells are drilled to a depth of a mile and a half. In 1861, two years after Col. Drake's well started this industry, the country's production for 12 months was much less than the wells of this country have produced in the last 24 hours.

Last year the more than 300,000 wells of the United States produced over three-fourths of a billion barrels, and this year the oil output from these and the new gushers will exceed 900 million barrels—a flood of oil that takes on the proportions of a national disaster.

Measured by the usual standard of value, this industry has grown in 20 years from a capital investment of $750,000,000 to something around $11,000,000,000. Measured by the standard of use, the products of this industry have now become the lifeblood of transportation—on the surface of the earth, in the air above, and in the waters beneath. The distance between continents is now figured in gallons of gasoline.

Since the first recorded production, nearly 1,000,000,000 barrels of petroleum has been taken from the earth. Our natural resources are giving us fabulous wealth, and potentially these same resources have a value beyond the calculation of the human mind.

OIL men may not agree throughout with all the points, even some of the facts, Dr. Work presents in his plea for a study of the legal aspects of oil conservation.

It would seem that Dr. Work uses the term "waste" loosely, inferring a physical waste the extent of which could be challenged.

He speaks of an overproduction of a million barrels a day, and many would like to know how he arrived at that figure.

Nevertheless, his remarks are valuable because they present the point of view of the public, and more particularly, the 1,500,000 members of the public financially interested in the oil business.

Another valuable address at this same meeting is carried starting on Page 49 of this issue. It is that of James A. Veasey, Tulsa, general counsel of the Carter Oil Co., which reviews in comprehensive fashion oil and conservation laws and litigation during the life of the industry.

Index to Coming Meetings

Symposium between Industrial & Petroleum Division and Automotive Engineers of the American Chemical Society, on motor fuels, Detroit, Mich., Sept. 6.

National Petroleum Association, Hotel Traymore, Atlantic City, N. J., Sept. 14, 15, 16.

Illinois Petroleum Marketers Association, Soengataha Country Club, Galesburg, Ill., Sept. 15.

Ohio Petroleum Marketers Association, Miami Hotel, Dayton, O., Sept. 22, 23.

Fourth International Petroleum Exposition and Congress, Tulsa, Sept. 24 to Oct. 1.

Petroleum Section, National Safety Council, Hotel Stevens, Chicago, Sept. 27 to 30.

Big Four State Jobbers, Kansas City, Mo., Oct. 4, 5, 6.

Fuels Division, American Society of Mechanical Engineers, St. Louis, Mo., Oct. 10, 11, 12, 13.

Wisconsin Independent Oil Jobbers association, Plankinton Hotel, Milwaukee, Oct. 12.

Petroleum Division, A. I. M. E., Texas Hotel, Fort Worth, Tex., Oct. 19, 20.

American Oil Men's Association, West Baden Springs Hotel, West Baden, Ind., Nov. 2, 3, 4.

American Petroleum Institute, Hotel Stevens, Chicago, Dec. 6, 7, 8.

Yet none of these resources should be regarded as inexhaustible. While billions of barrels of petroleum have come from the earth's depths, none can assure us that additional billions are yet to be recovered. With the extraction of each barrel of oil, our resources are being lowered that much, and the government has sought to impress upon the producers the necessity for storing oil in the ground instead of bringing it to the surface with resultant loss to everybody concerned.

Overproduction today is injuring millions who have their wealth invested in oil properties; it is injuring the great producing and refining companies; it is depleting a natural resource which can never be replaced.

Overproduction is no longer a debatable issue. Whereas a year or two ago the optimists in the oil business kept up their courage by denying both the fact of present surplus and the possibility of future deficit, all now admit that the oversupply of an expendible resource is the sure portent of future famine.

THE chief cause of overproduction is overcompetition. Nature and human nature seem to have conspired to make the oil game a game of chance. To judge from the remarkable progress made in the past decade in oil geology and oil engineering, it might seem that conquering nature is easier than restraining human nature. In the oil industry scientists and engineers have been winning in their attack on nature with the result that oil is being found more quickly and wells are being drilled more quickly and the underground supply is being brought to market more quickly. With all this speeding up of nature, however, no one seems to have thought of attempting to work on human nature, where there is urgent need of applying the brakes.

The present crisis in oil—described by one oil company president as the most malignant form of industrial disease and by another president as an economic disaster of international proportions—has come because of this delay in attending to the human side of the problem. Law makers and law interpreters have stood back while the procession of oil operators, petroleum geologists, production engineers, inventors and builders of machinery have passed by, making progress such as the world has never seen before.

It was appreciation of this situation a year ago that led our Federal Oil Conservation Board in its report to urge the formulation and adoption of remedial measures, all the more urgent in view of this intense activity of the engineers. We then suggested "that the lawyers familiar with the business of the oil operators take the lead in developing the needed line of action in accord with the discoveries of science and changes in engineering practice." A year has now passed, the peak of production of oil is endangering the health of the industry—indeed, the very life of the smaller and weaker companies—and yet no constructive move has been made toward "relieving the pressure of competition" which now bears so heavily upon the thousands of units in the business which the country can not afford to see go down and out. Are we to indulge in this watchful waiting for disaster?

The oil man has many troubles—hazards bristle all along his path—but the chief handicap of the industry is underground. Every lawyer knows how productive of litigation is any uncertainty about the exact location of property lines; in oil lands that uncertainty extends to the location not of surface lines but of the subsurface property—the oil itself. When once man has started things, this property is mobile, so that the contest cannot be a leisurely procedure in the courts but of necessity becomes a strenuous fight on the ground, with drilling rigs and crews racing to reach the oil first and to reduce to actual possession the elusive and fugitive property.

The ordinary workings of the economic law of supply and demand find no chance in the business of producing petroleum. The decision to drill does not wait on market reports; demand for the product is rarely a factor in influencing the development of oil property—simply the desire to get the oil before someone else gets it. Thus as in no other activity, the oil industry throws financial conservatism and business sagacity to the winds and indulges in the primitive instincts of the chase.

Now, at last, the thinking leaders of this great business realize the need of restraint—preferably from within, self-regulaton, but at all events some restraining hand. The engineering helpers of the industry have perhaps done their work too well; they have speeded the business to the present peak of disastrous overproduction; the need now is for the legal-minded advisers to realize the economic crisis and bring the relief, and bring it speedily. If eminent oil men are justified in their diagnosis of this overgrowth of the oil business as malignant, I suggest the calling in of some doctors of laws to treat the sick industry, and it is heroic treatment that seems indicated by the symptoms.

CONSTRUCTIVE statesmanship is plainly needed, and the time is ripe for action. The oil industry is sick and therefore repentant and asking for help. Wisely, the leaders have adopted a policy of publicity, as is shown by recent conferences. Such discussion in the open is the best sign to the public that the industry has nothing to hide. Placing the facts before the public is always the best method of allaying suspicion and preventing misunderstanding. This treatment with the ultra-violet rays of publicity may detract from the rosy aspect of things but it has a truly remedial effect in the end.

I have discussed conditions within the industry, and the immediate problems and the future of the immense producing and distributing companies. I recognize that a successful industry naturally contributes toward a successful nation. But it is the latter, however, that holds paramount interest for me. The need for conserving in the ground our natural petroleum deposits was never more apparent than now. During the past three years new facts have been developed, new discoveries made, and the entire petroleum situation must be viewed in a new light, from new angles.

At present overproduction is approximately a million barrels a day. If this immense surplus were permitted to remain in the earth, our future needs would be assured, our national life more surely safeguarded.

DURING the life of the Federal Oil Conservation Board two great pools, Smackover and Seminole, have been developed, with enormous production—production not needed, and production attended by great economic and physical waste. The millions of barrels of oil thus thrown upon the market, and the waste of billions of feet of valuable gas, have wrought injury upon nation and industry alike.

If federal or additional state legislation is essential as a corrective, the sooner such enactment is evolved the better. If the remedy rests with the oil companies themselves, through voluntary and wholehearted co-operation, or through compulsory unit pool operation, or some other method, the time is pre-eminently ripe for action.

The day of plenty may be succeeded by the day of famine. As a nation we can not gamble with our safety, we must be sure-footed in our material progress. And our progress depends largely upon a known and plentiful supply of petroleum,—the new driving force that now sustains our constantly expanding nation.

The once great divergence of opinion concerning the necessity for national conservation no longer exists among the leaders of the industry; therefore it behooves the legal profession identified with the oil world to work out a sane and positive course that will protect our national structure in the years to come.

With the idea that general and widespread benefits outweigh individual and scattered advantages is naturally linked the idea of subordinating temporary advantages to long-term benefits. This in a way is what oil conservation means—considering the industry as a whole rather than a few individual units, and considering con-

sumers, large and small, as well as producers, and all this over several decades instead of a few months. It is the future welfare of the whole industry that means more to the general public than the ups and downs of a single year.

The present trouble is not one of price demanding regulation in terms of the consumer, but rather conservation measures to prevent overproduction and permit the stabilization of the industry that will serve all, producer and consumer. The single item of gasoline prices may obscure our long-distance vision of the larger problem.

The owners of more than 22,000,000 automobiles in the United States are interested in the price of gasoline. The rise and fall of price levels are watched constantly and carefully. The causes for frequently recurring fluctuations are debated with varying emotions. Analysis of contributing factors often is sound, but more often unsound.

WHEN gasoline prices are discussed consumers are inclined to remember the days of low prices and forget that gasoline prices have repeatedly risen to higher levels than prevail at the present time. The automobilist when he speaks of low prices usually has in mind the low prices of 1914 and 1915, when the flush production of the Cushing field forced the price of crude oil to the low level of 30 cents a barrel; but the same buyer of gasoline fails to recall the high price of 1920, when there was a threatened shortage of crude and gasoline prices reached the highest point for many years—31 cents a gallon in New York City. The wholesale price of gasoline in New York City on both May 1, 1907, and May 1, 1913, was 17 cents a gallon as compared to a price of 20 cents on May 1, 1926, and 19 cents on May 1, 1927. Other essential commodities have shown a much higher increase in price during this period.

Another element in the retail price of gasoline that frequently is overlooked in comparing present prices with those of former days is that now practically every state in the country collects a tax on gasoline, the amount ranging from 1 cent to 5 cents a gallon. This tax added to the retail price of gasoline has confused the public in that too often the consumer places upon the oil industry the entire blame for increased prices. Even the governor of an eastern state in comparing last year's local retail prices with those of previous dates overlooked the fact that in the interval his own state had added the tax.

The automobilist also fails to consider the fluctuations in the prices of crude oil, yet these are greater than those in the prices of gasoline. This more violent swing is due to the fact that the supply of crude more directly affects its price, so that the bringing in of a few big pools within a short period completely upsets the price structure. The lowered price due to flush production carries the certainty of large losses to the small producers, for while it is true that the wide swing in price of crude oil has been said to mean enormous gains offsetting enormous losses, unfortunately the gains and losses are not impartially distributed. The industry includes small units along with large, and it is the little companies or individual owners of a few wells who are in dire straits at the present time. Immediate action is needed to save many of these small producers from disaster, an economic loss which would later involve the consumers.

The consumer cannot afford to have any of the thousands of small wells abandoned in this period of oversupply, for their output will be later needed. Long-term stabilization of the business under conditions which allow all producers to operate means lower prices to the consumer in the end that can be expected to prevail if cut-throat competition exploits the present, with little or no regard for future needs. In the long run, conservation will pay dividends to the consumer.

The present-day price of gasoline, then, is not the only factor to be considered. Nearly three years ago in appointing the Federal Oil Conservation Board the President pointed out that oversupply "encourages cheapness, which in turn leads to wastefulness and disregard of essential values." One of the economic leaks due to overproduction is the wasteful competition in distribution.

In the distribution of gasoline through the 250,000 filling stations scattered over the length and breadth of our land, the automobilist is well served, but at what a cost! The service station absorbs nearly as much of the price you pay for gasoline as the refinery and oil well, while the transportation charges generally equal the highest of state taxes. Plainly, distribution costs too much, for there are far too many outlets for the oversupply of this commodity, the total demand for which is much more affected by the weather than by brightly painted service stations or attractive roadside advertising signs. We thus pay for a competition that increases costs rather than reduces prices, and that piling up of unnecessary cost has been estimated in a single state at not less than $20,000,000.

The outstanding fact in the present oil situation is that during the last few years new and large producing oil fields, developed to capacity under conditions of rapid and competitive exploitation, have produced a supply of oil far above and beyond the demand of essential use. The market has been deluged with so great a supply that petroleum has been forced into keen and violent competition with coal in nearly all its area of consumption, with the result that possibly one half of America's oil production is being used to displace the legitimate and equally effective use of coal.

The waste of natural gas incident to the past and present methods of capturing oil at the surface is prodigal and extravagant, and the gas thus lost is estimated to be equivalent in value and effectiveness to a very large percentage of all the petroleum actually subjected to control and ownership. In the light of these developments it can hardly be urged that the time is not ripe for a rigid economy and conservation of this great and useful natural resource.

THE government itself as the administrator of the public and Indian lands happens to be no negligible factor in the current production of petroleum. The Secretary of the Interior unfortunately does not possess as much discretionary authority over the Indian oil lands as could be used to the advantage of the Indian owners, the lessee operators, and the public, but as regards the 500 oil and gas leases on government land I may assert that the government landlord is perhaps the best conservationist among landlords. Not only are the government leases administered with the best of engineering skill, but the lessees have been encouraged to delay development and restrict production under the present conditions of general overproduction, with the result that a large part of the shut-in production in the whole country is actually on the public lands. In this respect the government is following the advice of the oil board to the industry.

All that I have said of the relation of oil conservation to public interest, of the inherent danger to future prosperity from present waste, of the call for constructive statesmanship to save an overcompetitive industry from itself—all this is typical of a larger problem in democratic government.

The present is a period of marvelous progress in scientific discovery, in engineering application, and in industrial development, but there is a lag in the performance of the laws governing business. I might suggest that we have too many laws applied to superficial symptoms: for example, many well-meaning individuals will rush forward with proposals to effect some control of the price of gasoline, but no one thinks of seeking to reduce the cost of producing crude oil or of encouraging the storage of unneeded oil in the original package—that is, underground—at no extra cost.

(*Continued on page* 28)

Prospects Are Bright for Success Of 1927 Oil Exposition

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, Aug. 27

SOMEHOW, the seeing of a thing while it is being built adds later appreciation to it after it is finished. One has a clearer conception of it in its completed state if he remembers the planning, the toil and the material that went into it.

Southeast of Tulsa there is being created a permanent plant for the International Petroleum Exposition. Its enduring character will not be so obvious to those who walk through the grounds late in September, in the eight days from Sept. 24 to Oct. 1 unless they have visited it during the months of construction. And as comparatively few have seen it or will see it until it is in order as a complete show, not many will catch the vision that was set up in the minds of the men who are building it nor will many appreciate the painstaking effort that was exerted to make the vision reality. These directors, General Manager J. Burr Gibbons and his staff, are now seeing the completion of their plans.

This year's Exposition has no great outward similarity to those of former years, except that it is still—and more than ever—the oil industry's show. It has been built with greater symmetry of arrangement, it is more compact and at the same time there is more space. That is, space for the visitor.

FOR the general design of the new Exposition suggests a skilfully planned amusement park in that the visitor sees the whole panorama at one glance and the attractions lead naturally from one to another without awkward turns and obstructions.

The situation at the beginning of the year when real discussion began as to the staging of an Exposition in 1927 was not bright. The 1925 show did not pay. Bad weather which kept down attendance, the non-appearance of large exhibitors who opposed the idea of holding a show every year, conspired to reduce the revenue. There was an obligation to continue payments on the site that had been purchased in 1924.

Directors of the 1927 Exposition had nothing outstanding to encourage them, but they went at it as they have gone at many an oil development and equipment manufacturing proposition. They began systematically to remove the obstacles, one by one.

There was the matter of the site. The Tulsa state fair board promised to provide a large space, rent free and tax free, adjacent to the fair grounds. Cheerfully and quickly the Prairie Oil & Gas Co. cancelled the purchase agreement on the site that had been occupied in 1924-25. So that was off the books. The financial outlook was helped by that much.

ESTIMATES were made of the cost of moving the buildings from the old site and doing all necessary work on the new grounds, taking care of the overhead expense and clearing away the dead timber of the last show. The amount for all this would be near $85,000. The directors thought well enough of the proposition to underwrite the whole expense.

The money would have to come from sale of space and from admission charges. To date the sales of space represent close to $80,000. A little more space will be sold and admittance receipts are certain to take care of the rest. The directors would be gratified to wind up this year's Exposition with a surplus, but as it is a non-profit enterprise, they will consider it a success if they merely pay for this year's show.

There was much to be done in getting ready this year's Exposition site. It was a tract of ground unimproved in any way. The Exposition owned two huge steel buildings which had been erected on the old Prairie site. These were moved. Demand for space called for the construction of a third building. These three are all-steel structures.

In its completed state, as the visitor at this year's show will see it, the Exposition plant will consist of a 10-acre plot, fenced and with attractive extrance and turnstiles at the northwest corner, a short distance from which the Oklahoma Union Railway is building platform beside the tracks recently extended to the grounds. At the southwest corner is entrance for automobiles leading to the large parking space for exhibitors.

TWO buildings were moved from the old grounds. These are named the Texas and the Oklahoma buildings. They have been placed, one at either side of the grounds, running east and west and a new arcade 10 feet wide runs the full distance of 240 feet connecting the two buildings at their east ends. Thus a part of the grounds is enclosed by buildings on three sides and to the east of this arcade is the new scientific and technical building, whose dimensions are 60 by 160 feet.

The Texas and Oklahoma buildings are 60 by 380 feet. All these are steel and they have been set on concrete piers 10 feet apart and running the narrow way of the buildings, so there is adequate support for any kind of equipment that may be exhibited inside.

Each of the buildings will have four rows of exhibit booths, one on each side and two in the center, back to back, this giving the visitors access to everything in the buildings through two aisles. The arcade will have a single row of booths with a walk in front.

ADDITIONAL to these buildings construction under way includes a restaurant and an office building, permanent structures of like general appearance. These are at the west side of the grounds and look upon the "public square" formed by the large buildings. The management also has under construction a band stand and a dance platform, for in the evenings the visitors are to be given free music and a place to tread a dance measure if they desire.

Things have been simplified for the exhibitor as much as possible. Each is given free connections in his space for water, light, power and gas, storage space for crates and boxes that will be needed to ship the exhibits after the show ends, free parking space and passes for the company representatives. And, as pleasing as anything else, the rates on space this year have been materially reduced over the charge made in 1925.

Although farther from the business district of Tulsa than the former site, the 1927 Exposition grounds are easier to reach. The approach is not cluttered up with railroad tracks and there are several routes which can be followed for large part of the distance, all crossing East 21st street, which leads directly to the grounds, the paving running right to the entrance.

This year's Exposition stands as an example of careful planning and thoughtful provision against every condition that will arise. Its certain success will be directly traceable to that effort.

New Plugging Device Uses Gelatin To Force Lead Into Walls

Staff Special
TULSA, Aug. 27

A NEW idea in plugging off bottom water is being developed by M. M. Kinley, of Tulsa, who has secured patents on his device. Mr. Kinley is widely known throughout the Mid-Continent field and in California through his fire-fighting exploits, he being a pioneer in the art of shooting out burning gas and oil wells. He is also an experienced well-shooter and has much success with the use of gelatin.

The plugging device consists essentially of a solid lead slug of whatever length is made necessary by conditions in the well, shaped to go down inside the casing, and bored out to receive a charge of 40 per cent gelatin in the center. When placed at the proper position in the well, the gelatin is exploded by an electric contact from the surface, and the lead is driven outward to imbed itself firmly into the walls of the hole.

Immediately above the lead plug as it goes down into the hole is a tin shell containing newly-mixed concrete containing some other quick-setting compound. This concrete rests directly on top of the lead slug and, when this has been expanded by the explosion, the concrete descends into the cavity formed in the center of the lead plug, thus filling the hole up solidly. The device is let down with a special wire line and winch attachment, by which the tin shell is drawn to the surface after its concrete contents have been dumped.

BELOW the lead plug and fastened to it is a loosely-wired ball of oakum which is designed to assist in the packing-off process by being forced up into the interstices between the lead and walls of the hole by pressure of water from below. The device has been used in only one well so far, this being a well of the Tidal-Osage Oil Co., in the Wildhorse district, Osage county. A good water shut-off was obtained, but it proved to be only temporary, as after about 30 days water forced itself around the plug and into the hole. This device did not have the oakum attachment.

Success of this device depends largely upon knowledge of the water pressure present and upon ability to find a good lime or other hard formation in which to set it. In shale or soft formations, it probably would do no good at all. It is believed that one factor in the failure of the device in the well mentioned above was that it was not set in the lime as intended, on account of inaccuracy in the well-log.

If proved successful, this device should be valuable in plugging off water in pumping wells, as it does not necessitate rigging up a string of tools, which would add considerably to expense of the operation. In plugging with lead wool, for instance, a good shut-off is usually obtained, but tools are necessary to pound the lead wool down into the hole.

Another of Mr. Kinley's ideas now in course of development is a sounding device for determining the point at which casing is frozen in the hole. It is customary, when frozen casing cannot be started by pulling, either to rip or shoot it in two, but it is important that the ripping or shooting be done at the proper place in the casing. The point at which the casing is frozen usually is determined either by sounding with a weight and line between walls of the hole and outside of the casing or by testing for vibration while pulling on the casing. No vibration will be felt at the surface until the spear or fishing tool being used is above the freeze.

The Kinley sounding device uses a two-tube radio outfit, with which a microphone is lowered into the well and a hammer is used to strike walls of the pipe. A head set for the listener on the derrick floor enables him to determine immediately when the hammer is opposite the freeze, as it givs off an entirely different sound from that made by the hammer when the pipe is free in the hole. The device has spring clips which are opened when it is at bottom and which hold it in place in the pipe. Ends of these clips engage in the opening between ends of pipe at each collar. By working the device gently up and down at the collars, the hammer is actuated by gravity and strikes the walls of the casing. As soon as it is determined that the casing is free in the hole, the device is pulled up to the next collar and the process is repeated, keeping on until the frozen joint is located.

Salt Water is Used To Remove B. S.

Staff Special

TULSA, Aug. 27.—It is unsightly and dangerous, both as a fire hazard and for its possibility of injury to employes, to allow the ground around lease stock tanks to become saturated with oil. Much of this saturation takes place when tank bottoms are cleaned out and the b.s. and other refuse are washed out on the ground around the tanks.

This has been taken care of ingeniously on the famous Mary Gooden lease of The Texas Co. in the old Cushing field. Its stock tanks are provided with boxed-in sump holes into which the b.s. is washed when the tank is being cleaned out. These sump holes extend under the tank and are not visible except for that portion of them which is directly under the cleanout plates. Salt water from the flow tank, which moves by gravity to the slush pit, runs through these sump holes, keeping them constantly flushed out. Thus refuse from the tanks finds its way to its proper destination, the slush pit, and the ground around the tanks is maintained in a clean and sightly condition.

Gas Lift to be Used In Alberta Field

Staff Special

TULSA, Aug. 27.—D. K. Hutchcraft, sales engineer for the Clark Brothers Engine Co., with Tulsa headquarters, has recently returned from a trip through the fields of Wyoming, Montana and Canada, during which he supervised and inspected a number of gas-lift installations.

In the Turner Valley field, near Calgary, Alberta, preparations are being made to put the Dalhousie well on gas-lift. This well, which is now flowing about 400 barrels daily by heads, will be flowed with engines and compressors already installed and in use as boosters. Mr. Hutchcraft states that the Royalite well, discovery well of the field, is still making about 600 barrels of 72 gravity oil daily, with rock pressure of 2500 pounds. The well is now about three years old. The Royalite Company is a subsidiary of Imperial Oil, Ltd.

In the Sunburst field, Montana, a recent gas-lift installation is that of the Rice Oil Co. This company's well was making 1500 barrels of fluid, of which 70 barrels was oil, on the pump. On lift, it is making 110 barrels of oil and 2800 barrels of fluid. A 90-h.p. tandem compressor is being used, with pressure of 210 pounds and volume of 525,000 cubic feet per day. The gas is being recycled.

A peculiar situation exists in this field, according to Mr. Hutchcraft, in the case of one of the gas-lift wells. When this well is being flowed on lift, a well three locations away ceases to make water and makes pipe line oil. As soon as the gas-lift well is shut down, the other well immediately starts making all water. No effect of the gas-lift is noticed on any intervening wells or on any other wells in the field.

Reports of 14 Oil Companies Emphasize Havoc of Heavy Production

CLEVELAND, Aug. 29

ADDITIONAL income reports of oil companies on their operations in the first half of 1927 further emphasize the depressing effect of low prices for both crude and refined oils because of the overproduction in Seminole.

Comparative income statements of 14 Independent companies show net earnings of only one of them were larger in the first half of 1927 than in the first half of 1926. That company was one of the smaller ones.

In the accompanying comparison of earnings of 14 companies and in a comparison of 12 other companies' 1927 earnings with those of the first half of 1926, published in the Aug. 3 issue of National Petroleum News, only one of the more active corporations showed higher profits this year than last. That company is the Independent Oil & Gas Co.

While the gross income of the Amerada Corp., one of the leading operators in the Seminole district, was larger than in 1926, the net profits after making heavy depletion charges were lower this year. Net profits of Amerada in the first six months of 1927 averaged $2.28 a share on 915,675 no par shares, compared with $3.09 a share on 713,300 shares in 1926. In the first half of this year, Amerada's production averaged daily 30,000 barrels of crude and 90,000 gallons of natural gasoline.

Comparative figures of Beacon Oil are not available. Stock outstanding June 30 consisted of 24,126 shares of 7 per cent preferred stock and 704,000 shares of no par common. After payment of dividends on the preferred stock there was a surplus of $149,555, subject to federal income tax. Clifford M. Leonard, chairman, issued this statement:

"During the first six months sales showed the following increases over the corresponding period of 1926: Jobbers 5 per cent, tank wagon 102 per cent and retail 28 per cent, an average increase in these departments of 45 per cent. Lubricating oil sales were 90 per cent greater than in the first half of 1926."

CALIFORNIA Petroleum Corp. went into red figures in the second quarter and its net profits for the half year, which averaged 45 cents a share on 2,060,917 no par shares and was 55 cents a share short of covering the dividend requirements for the first two quarters. This explains why the quarterly dividend rate was reduced to 25 cents. On June 30 the company was carrying 7,448,813 barrels of crude and refined oils in stock, an increase of 1,116,597 barrels since Dec. 31.

General Asphalt issued a statement saying its earnings had been injured by bad weather which curtailed paving operations as well as by the low prices for oil. Net to common this year was less than one third the net in the first half of 1926, the decline explaining why dividends were not resumed on the common stock recently as expected.

Shell Union's earnings after reserves except for federal income taxes fell almost $10,000,000 in the half year as compared with a year before. Of the decline this year more than $8,000,000 came in the second quarter. On June 30 the company had outstanding 169,654 shares of 6 per cent preferred and 10,000,000 shares of common.

Simms cut its deficit in the second quarter, President Edward T. Moore announced. The deficit was $136,219 the first quarter and $75,389 the second when flush production in west Texas increased its operating income. Production the second quarter averaged 11,993 barrels daily, a gain of 2000 barrels in the daily average over the first quarter production. July production exceeded 15,000 barrels daily, Mr. Moore informed stockholders. Prices received for the crude averaged $1.05 a barrel in the second quarter of 1927 compared with $1.72 a barrel in the second quarter of 1926. Inventory of crude and refined oils increased 550,000 barrels this year to 1,650,000 barrels June 30.

Sinclair's earnings before reserves show a shrinkage of 20 per cent in the first half of this year compared with the first half of 1926, although the volume of oil marketed was much larger this year than last.

SINCLAIR'S balance sheet of June 30 shows total assets of $379,000,000 after deduction of depreciation, depletion and amortization reserves. Net property valuation as carried in the balance sheet increased $11,000,000 since Dec. 31. Inventory has increased $1,700,000. Volume of oils carried is not given. Current assets June 30 were $55,841,399 compared with $52,568,659 Dec. 31 and current

Comparative Condensed Earnings Statements for First Halves of 1927 and 1926

Company	Year	Gross Operating Income	Expenses Costs etc.	Net Operating Income	Total Income	Deprec., Deplet., Other Res.	Net Profits	Net to Common A Share	Quarterly Dividend on Com.
Amerada Corp.	1927	$9,588,948	$4,336,326	$5,252,622	$5,499,816	$3,409,387	$2,090,429	$2.28	$0.50
do	1926	6,294,808	2,358,423	3,936,385	4,056,931	1,855,072	2,201,859	3.09	.50
Beacon Oil Co.	1927	3,240,594	2,444,110	796,484	796,484	556,456	†240,028	....	....
California Petroleum Corp.	1927	.....	.....	6,602,713	6,602,713	5,661,599	941,114	.45	.25
do	1926	.....	.....	.....	.....	.....	3,578,065	1.88	.50
General Asphalt Co.	1927	9,249,419	8,155,049	1,094,370	1,094,370	789,355	305,015	.61	....
do	1926	8,400,875	7,057,032	1,343,843	1,343,843	719,038	624,805	2.20	....
Louisiana Oil Refg. Corp.	1927	.....	.....	1,055,509	1,286,005	1,024,442	261,563	.11	....
do	1926	.....	.....	2,033,361	2,033,361	929,722	†1,103,639	....	....
Mexican Seaboard Oil Co.	1927	1,916,499	1,367,720	548,779	$79,768	1,857,703	*‡1 277,935	0	....
do	1926	2,919,037	1,612,378	1,306,659	1,354,361	1,586,841	*‡232,480	0	....
Mid-Continent Pet. Co.	1927	.....	.....	5,614,086	5,614,086	729,131	††4,884,955	....	.75
do	1926	.....	.....	7,609,834	7,609,834	792,950	††6,816,884	....	....
Panhandle Prod. & Ref. Co.	1927	2,694,923	2,461,006	233,917	242,751	522,834	*280,083	0	....
do	1926	2,305,004	2,089,010	215,994	288,892	255,274	33,618	0	....
Pennok Oil Corp.	1927	216,990	128,259	88,731	130,265	87,166	43,099	.28	.25
do	1926	516,153	160,704	355,449	418,022	238,080	179,942	1.20	.50
Shell Union Oil Corp.	1927	.....	.....	.....	23,469,487	15,880,070	†7,589,417	....	.35
do	1926	.....	.....	.....	30,614,968	13,374,592	†17,240,376	....	.35
Simms Petroleum Co.	1927	3,339,023	1,755,560	1,583,463	1,654,946	1,866,554	*211,608	0	....
do	1926	3,741,401	1,569,485	2,171,916	2,238,135	1,890,793	347,342	.51	.50
Sinclair Consolidated Oil	1927	82,188,444	68,649,395	13,539,049	.....	.....	.....	....	....
do	1926	85,214,576	68,290,575	16,924,001	.....	.....	.....	....	....
Skelly Oil Co.	1927	11,112,685	7,266,665	3,846,020	3,846,020	3,024,423	821,597	.75	.50
do	1926	11,875,519	6,242,715	5,632,804	5,632,804	2,526,346	3,106,458	3.18	....
Superior Oil Corp.	1927	1,715,010	513,150	1,201,860	1,201,860	960,223	241,637	.21	....
do	1926	547,151	509,315	37,836	37,836	413,596	*375,760	0	....
Transcontinental Oil Co.	1927	6,093,666	5,164,640	929,020	929,020	788,333	†140,687	....	....
do	1926	.....	.....	.....	.....	.....	†388,836	....	....
Derby Oil & Refg.	1927	.....	.....	.....	.....	.....	*73,678	....	....

*Loss †Before Federal Income Taxes ‡Before Depreciation and Depletion.

liabilities were $19,471,551 June 30 compared with $19,818,425 Dec. 31.

Superior's net profit for the first half was the first time in several years that this company's operations have been on a paying basis.

Skelly Oil failed to earn the half year's dividends. In the second quarter net profits after all charges were less than one seventh of the net in the second quarter of 1926. Skelly has not had the advantage of Seminole flush production to boost the volume of its production, but has suffered by low prices in less productive pools where relative operating costs are higher.

In a newspaper interview William G. Skelly, president of the company, was quoted as saying the oil industry had passed the crisis and that economies put into effect by the larger companies will result in increased earnings when oil industry affairs adjust themselves.

Pan American Petroleum & Transport Co.'s net in the first half of this year was $9,023,324 exclusive of earnings of the Lago companies. In the first half of 1926 net profits amounted to $15,335,616 also exclusive of Lago earnings. Fred H. Wickett, chairman of Pan American, issued this statement in New York:

"Net consolidated profit of Pan American Petroleum & Transport Co. and subsidiaries (excluding the Lago companies) for the first six months of 1927, after all charges, aggregated $9,023,324. It is estimated that including Pan American company's proportion of Lago profits the total will exceed $11,000,000 for the six months. It is anticipated that accounts of the Lago companies for the six months will be completed in about two weeks, when financial statements will be published."

Comparative second quarter earnings figures follow:

	1927	1926
Amerada Corp.	$ 924,754	$1,390,231
Beacon Oil Co.	†181,886	.....
California Petroleum	*91,512	2,331,180
Louisiana Oil Ref.	*33,332	841,154
Mexican Seaboard	‡760,027	‡339,146
Mid-Continent Pet.	††2,004,105	††3,962,624
Panhandle P. & R.	*139,270	66,488
Pennok Oil	7,930	82,689
Shell Union Oil	†2,306,162	11,744,485
Simms Petroleum	*75,389	221,613
Skelly Oil	254,336	1,808,166
Superior Oil	*82,745	*192,962
Transcontinental Oil	*75,093	†283,362
Derby Oil & Refg.	2,158	.....

*Loss. †Before Federal Income Taxes. ‡Before Depreciation and Depletion.

TULSA, Aug. 29.—H. M. "Hank" Morse, of Oklahoma City, who for some time has been in charge of Mid-Continent sales for the Banner Rock Wool Products Co., has been made general sales manager for the company. S. M. Stevens, known to the industry by the nickname of "Steve Himself," formerly with R. V. Aycock & Co., has been appointed Oklahoma manager for the Banner Rock Company, with Tulsa headquarters.

Schlee, Detroit Oil Man, Wings Way to Encircle Globe

EDWARD F. SCHLEE

CLEVELAND, Aug. 29

EDWARD F. SCHLEE, the Detroit oil man, and his pilot, William S. Brock, are well on their way to beat by airplane the globe encircling record of 28 days. Today they reached Germany and with favorable conditions by the time this story reaches its readers they will be somewhere in Asia.

The flight in Mr. Schlee's Stinson-Detroiter monoplane, the Pride of Detroit, will cover 22,067 miles, almost half of which will be over water. The route and distances between planned landings are as follows:

	Miles
Harbor Grace, Newfoundland.	
London, England	2,350
Munich, Germany	460
Belgrade, Yugoslavia	610
Constantinople, Turkey	500
Aleppo, Syria	590
Bagdad, Iraq	485
Bender Abbas, Persia	885
Karachi, India	710
Allahabad, India	925
Calcutta, India	485
Rangoon, Burma	665
Tourane, French Indo-China	600
Hongkong	890
Tokio, Japan (radio beacon)	1,820
Sand Island of Midway Islands, U. S. (radio beacon)	2,480
Honolulu, U. S. (radio beacon)	1,440
San Francisco, U. S.	2,400
Cheyenne, U. S.	925
Chicago, U. S.	865
Detroit, U. S.	257
Harbor Grace	1,550
Total mileage	22,067

The flight from Harbor Grace, Newfoundland, to Croyden field, London, was accomplished without trouble, Mr. Schlee cabled his brothers A. J., E. H. and D. S. Schlee, who are associated with him in the Wayco Oil Corp. at Detroit, A. J. Schlee said today.

No members of the Schlee family saw the two men hop off at Harbor Grace, Saturday, but Mrs. E. F. Schlee, Mrs. Brock and Mrs. Burns, wife of George Burns, Roxana Petroleum Corp., St. Louis, were at Curtiss field, Long Island, last week when the two intrepid flyers set out for Harbor Grace, confident that with fair breaks they would lower the globe encircling record and fly the first airplane entirely around the world.

Mr. Schlee has been interested in aviation for about two years, when he bought a plane partly for pleasure and partly for business reasons. The Pride of Detroit is the same plane that Miss Wayco recently won the National Air Tour but with a new Wright whirlwind engine. Both Mr. and Mrs. Schlee and their daughter were passengers on the plane on the air tour.

The idea for the world flight was conceived this summer when Mr. Brock and Mr. Schlee were conveying a party to the Kiwanis national convention. They were flying over Saginaw bay when Mr. Brock remarked that it was like flying over the ocean and told Mr. Schlee that he had worked out a course that seemed practical for flying around the world. They talked over the idea and in a week had decided to attempt such a flight.

Mr. Brock is manager of the Wayco Air Service, Inc., an air taxi service that Mr. Schlee operates at Detroit. He has been flying 15 years or since he was 16 years old.

Mr. Schlee's early business life was spent in the automobile industry. He worked for Cadillac and later was an efficiency engineer for Ford. About six years ago he and his three brothers built their first gasoline station in Detroit. They displayed good judgment in the picking of sites and today they are at the front among gasoline and motor oil distributors in the automobile capital. They distribute Shell and Valvoline products, and are using Shell aviation gasoline and Valvoline motor oil on their world flight.

On the present flight it is expected Mr. Brock will do most of the piloting and Mr. Schlee will act chiefly as navigator. The plane is equipped with an earth inductor compass and other late navigation instruments. Official government charts are being used wherever available but the course from Tokyo to Honolulu has never been crossed by an airplane.

On leaving Harbor Grace the Pride of Detroit carried 350 gallons of gasoline. There was remaining 85 gallons at the completion of the 2,350-mile leg to London. This was an average of almost nine miles to the gallon and a little more than 11 gallons an hour. They averaged 100 miles an hour.

Farish Makes Plea for West Texas Restraint, Stressing Dangers

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, Aug. 25

PRESIDENT W. S. FARISH of Humble Oil & Refining Co., in a second memorandum to Pecos county producers regarding Yates field pro-ration, sets up present potential production of 240,000 barrels daily in five areas of the west Texas salt basin and announces that he foresees increases to 378,000 barrels, Oct. 1, 482,000 barrels, Nov. 1 and 594,000 barrels, Dec. 1.

Ultimate recovery from the five currently productive areas in Pecos, Upton, Crane and Winkler counties is estimated to total 599,000,000 barrels, on the basis of known data.

"We are joining," he says, "with other producers, present and prospective, at 10 o'clock a.m., Sept. 2, in the board room of the First National Bank at Fort Worth, Texas, in a second effort to prorate the taking of crude from the Pecos county Yates pool. It is my hope that we may agree to produce ratably, on some equitable basis, whatever oil is produced from this pool, whether the amount be 30,000 barrels daily or 200,000 barrels daily."

After saying "we have made a study and estimate of the potential oil supply—proved and partly proved—in the counties of Crane, Upton, Pecos and Winkler," Mr. Farish describes the figures as astounding. These figures appear in an accompanying table in the form in which they were contained in Mr. Farish's letter to Pecos county producers.

Following his statement that this tabulation represents the best estimates the Humble has been able to make on the production to come from proved and semi-proved areas in the counties mentioned, Mr. Farish's letter continues:

"ALMOST all this production is competitive. By this I mean that ownerships in the fields are so diversified that if one operator produces his oil and his neighbor does condition in each proven area will be drained, the extent of drainage depending upon circumstances. This condition in each proven area will force each leaseowner to drill and produce if one leaseowner produces.

"A glance at the estimated production possible from these counties ought to convince any one of the folly of producing the oil at this time. The outlet is limited. The oil cannot be sold and moved to market. If it is produced now in the usual way, most of it must go to tankage. Tankage is expensive. Carrying costs of oil stored in steel are high. All of this crude is nigh in sulfur content, consequently corrosion of tankage will be rapid and ultimate salvage negligible.

"THERE is no economic or sane reason that I can find why this oil should be produced in quantities in excess of what can be transported and marketed. I believe Senator Borah is right when he says, 'From the standpoint of the public, that which is economically unsound is morally wrong.'

"Such excess production will cause both waste of oil resources, with consequent future damage to the public, and also present financial disaster to the industry. Officers, directors, stockholders and bankers of all oil producing companies should protest the production of oil that must go into steel tankage. The public is vitally interested in the prevention of such threatened waste of oil supplies."

Mr. Farish's memorandum is the second issued this month to west Texas producers. The first was issued Aug. 11 in connection with his call for a proration conference, which was held a week later in his office at Houston. In the first memorandum, he called attention to facilities the Humble soon will have ready for handling 30,000 barrels daily of Yates field crude. He asked producers in the field to agree among themselves, appointing an umpire if deemed advisable, on the ratable apportionment of crude oil takings by the Humble.

The Humble, which has the only trunk line outlet from west Texas territory for the handling of purchased crude, made clear in Mr. Farish's first memorandum[1] "that it is our opinion 30,000 barrels represents the extent of the market for this oil, and we are willing to share the market equitably with the various producers."

At the conference held in Houston, Aug. 18, it was agreed to confer again in Fort Worth, Sept. 2, for further discussion of the pro-rating program[2].

Later, on Aug. 23, the Humble posted a flat price of 60 cents a barrel for crude it purchases in the Pecos, Crane, Upton and Crockett county fields. At the same time, the Humble reduced crude from Hutchinson, Wheeler and Carson counties, in the Texas Panhandle, to a flat price of 75 cents a barrel at the well[3].

Present and Future Potential Production Estimates for West Texas Salt Basin Fields

POOL	PRESENT POTENTIAL PRODUCTION	OCTOBER 1	NOVEMBER 1	DECEMBER 1
Yates	86,000	156,000	236,000	323,000
Church and Fields	93,000	100,000	100,000	100,000
Gulf-McElroy	25,000	46,000	40,000	35,000
McCamey	20,000	20,000	20,000	20,000
Hendricks	16,000	56,000	86,000	116,000
Total	240,000	378,000	482,000	594,000

POOL	ESTIMATED ULTIMATE RECOVERY
Yates	255,000,000
Church and Fields	55,000,000
Gulf McElroy	100,000,000
McCamey	54,000,000
Hendricks	135,000,000
Total	599,000,000

1—Page 19, Aug. 17, 1927 issue, NATIONAL PETROLEUM NEWS.
2—Page 19, Aug. 24, 1927 issue, NATIONAL PETROLEUM NEWS.
3—Page 18, Aug. 24, 1927 issue, NATIONAL PETROLEUM NEWS.

American Refining Co. In Receivers' Hands

TULSA, Aug. 29.—The U. S. District Court at Dallas has placed the American Refining Co. of Wichita Falls in the hands of receivers at the request of both the company and its creditors.

Receivers are John W. Hoosier of Dallas, oil producer; E. H. Eddleman of Wichita Falls, vice president of the Continental Oil Co. of Texas; and J. C. Mytinger of Wichita Falls, oil and real estate operator.

The company operates a 6,000-barrel skimming and cracking plant at Wichita Falls, a system of distributing stations and is a producer of oil in north Texas fields.

Full Text of Secretary Work's Address

(*Continued from page* 20)

rather than in huge steel tanks that cost 50 cents a barrel. My feeling is that it is more the part of constructive statesmanship if we seek to lower prices by making economic conditions favorable to lowering costs.

There may be too many petty laws, but there is too little fundamental law that defines the larger relation between Government and business, bringing the two into vital harmony. It is the process of education that both the public and the oil industry so much need at this stage to which the Federal Oil Conservation Board has devoted much of its energies, and the progress made encourages my faith that government and all industry can work together for the common weal. More authority is needed for governmental activities in aid of business, but the oil industry, at least, now seems to appreciate that its first step is to win public confidence by taking the public into its confidence.

The approach toward effecting ways and means for the accomplishment of conservation seems to require complete publicity of an industry's activities as the price of greater freedom of action. What is needed is not government interfering with business nor business meddling with government, but government helping industry for its own and the public good. To that end, I ask that you contribute to national conservation the legal advice it sorely needs.

Court Sets Aside Tennessee Law Fixing Gasoline Prices

(By Telegraph)

NASHVILLE, Tenn. Aug. 29

DEFEATED in an effort to make gasoline price fixing a function of the state government by a decision of the federal district court Aug. 21, officials of the present Tennessee administration say the case will be appealed immediately to the United States Supreme Court, according to attorney General L. D. Smith. The litigation grew out of an act passed by the legislature last April, which created a Bureau of Motor Fuels under the state department of finance, in charge of a superintendent, whose duty it was to keep advised about conditions in the oil industry and name prices he considered right. It was an administration measure conceived by Gov. Austin Peay. The Independent Oil Men of Tennessee helped to get it passed, because it carried provisions outlawing the practice of giving rebates.

Immediately the bill was passed it was rendered inoperative by a temporary restraining order from federal court. The state never even appointed a head for the new department. Both sides hurried the case to a hearing and it was argued in Nashville May 28. Briefs and supplementary briefs have been filed since, while the bench of three judges held the matter under advisement.

The judges were Charles H. Moorman, of the United States Court of Appeals, and John J. Gore and E. X. N. Hicks of the District Court. All agreed that the price fixing law violated the 14th constitutional amendment because it interfered with the individual's right of contract. Cases of this kind may be appealed direct from district to Supreme Court, the lawyers say.

Standard Oil Co. of Louisiana, The Texas Co., Pan-American Petroleum Corp., and National Refining Co., brought the injunction. John Bell Keeble, local attorney for The Texas Co., says he is glad the case is going to be appealed and settled for all time because other states may follow Tennessee's example and attempt price regulation, bringing great expense upon companies of wide distribution.

Some choice quotations from the court's decision follow; "The act makes it unlawful to sell gasoline without a permit from the superintendent of the division of motor fuels. . . . It became effective from and after its passage and every sale of gasoline thereafter made by a dealer is unlawful and punishable as a misdemeanor. Clearly therefore the continuation of business of complainants would result in oppressive prosecution.

"The act without doubt confers upon the superintendent the power to fix prices at which gasoline shall be sold in the state. In this respect it has the effect of depriving both seller and purchaser of the freedom of contract, a right within the protections of the 14th amendment.

"The act does not purport to be an emergency measure. It is nothing but an attempt to fix the price at which one may sell or buy gasoline, a commodity concededly necessary to the well being of the citizens of Tennessee, but not more necessary than many other commodities bought and sold within the State.

"It is said that the statute may be upheld as a valid method of suppressing monopolies, which is declared one of its aims. We can not concede that a purpose, however beneficient, may be effected by unconstitutional means."

Attorney General Smith says the case will go up on the original contention of the state that the sale of gasoline is "impressed with public use" to the extent that state control of price is justified.

Corrections

The change in gasoline prices at Houston on Aug. 19, reported on page 102 of the Aug. 24 issue of NATIONAL PETROLEUM NEWS, was a decrease of 2 cents on tank wagon and service station prices, instead of an increase. Prices on Aug. 19 became 17 cents, both tank wagon and service station, including 3 cents state tax. The dealer is allowed 4 cents off this price.

Likewise the change was a reduction of 2 cents at Fort Worth and San Antonio, instead of an increase. Dallas prices were also reduced 1 cent, to 17 cents, including 3 cent tax, with 4 cents off to dealers.

* * *

Information received after refinery tables in this week's issue were published, indicate that price of Oklahoma 58-60 U. S. Motor gasoline on Aug. 29 should have been 6.125 to 6.375 cents, instead of 6.25 to 6.50 cents. Price in the table will be corrected in the issue of Sept. 7.

Oil Mining Is Next to Uren Articles

COMING now to a more modern method of oil production—at least in its commercial application in this country, although one where the same chemical and physical principles as have been previously discussed are applied, oil mining is the next topic to be taken up in the Uren series on Improved Production Methods.

There will be two articles on this subject of drainage of petroleum through mine openings. Practical production men will be particularly interested in them because of the commercial exploitation of the Ranney oil mining process during the past two years in this country.

The articles on practical production methods by Lester C. Uren, head of the petroleum engineering department of the University of California, and acknowledged authority on this subject, appear regularly and exclusively in NATIONAL PETROLEUM NEWS.

Modern Merchandising Trend is Met By Low-Price Station, is Claim

TULSA, Aug. 27

THE low price bulk, or railroad, gasoline station made itself a factor in the retail merchandising of gasoline in Tulsa, when the Little Giant Oil Co. opened for business at the corner of East Eleventh and Zunis streets two days ago.

Unheralded by any advertising of its prices, it started off selling gasoline at 14 cents. Most stations were selling at 18 cents. One station in the neighborhood put out a big 14-cent sign the following day and another was selling at 16 cents. Other places were holding to their old prices, as far as any outward evidence would show.

While most of these railroad stations that have been started up within the past few months in the east have been launched by newcomers in the oil business, the Little Giant Oil Co. is headed by a man at home in an oil atmosphere. He is Benjamin Kalkhoff, who takes credit for building the first refinery in Texas, the Richardson Gay plant at Corsicana, and who has been connected with various refining and marketing ventures since.

MR. KALKHOFF said he was active in launching this station at Tulsa because he is convinced the selling of gasoline at lower prices through stations direct from tank car storage, and without the trucking and overhead costs of the established oil companies, has a future.

He says his company plans to build such stations in other towns in the southwest. He will pick good-sized towns and he says he will build only one station to a town because he believes stations of this type, having only gasoline and motor oil to sell to be successful, must be established in locations where they are capable of building up a good gallonage.

His station at Tulsa is an unpretentious affair in appearance. The principal thing the visitor notices are two signboards, 50 to 60 feet long, one on each side of the small building that is both station house and company headquarters. One billboard sets forth tersely the company's policy:

Why You Save
No Credit Losses
No Middleman
Low Overhead
Volume Sales
Cash Only

The other signboard carries the company's name, the specifications of the gasoline it sells and the price. The station lot is pretty much given over to the driveway of chat, or rather it is area, not limited to driveways.

BENJAMIN KALKHOFF
Former Mid-Continent refiner, now running the Little Giant Oil Co.

There are five electrically-operated, 10-gallon pumps, 3 on one island, 2 on another. There are two air and water stands, set at the back of the station property. Gasoline is carried in 20,000-gallon buried storage, alongside the Katy tracks about 200 feet from the pumps.

The entire station investment, according to Mr. Kalkhoff was kept under $5000. It is on leased ground and the proprietor says he could let out the billboard space, now entirely used by the company, at a rent sufficient to more than carry the company's investment.

Mr. Kalkhoff says his station is a low-price, not a cut-price, station. It is not cut-price, he contends, because on the same gallonage as more expensive stations that have to be serviced by trucks, it will earn more on the investment.

"I believe the bulk gasoline stations will have to be recognized by the established oil companies as justified on economic ground", he said. "They occupy the same relative position to the oil merchandising business that the cash-and-carry chain store does to the grocery trade, or that the lunch counter restaurant does to the hotel dining room.

"GASOLINE users fall into the the same two classes as people who patronize eating places and do general retail shopping. There are those who want to buy as cheaply as they can and are willing to go to some personal inconvenience to accomplish that end, and there are others who want service and luxurious surroundings and all that goes with this. The quality of food may be the same, but the people do not expect to pay the same for a lunch at a counter restaurant as in the hotel dining room.

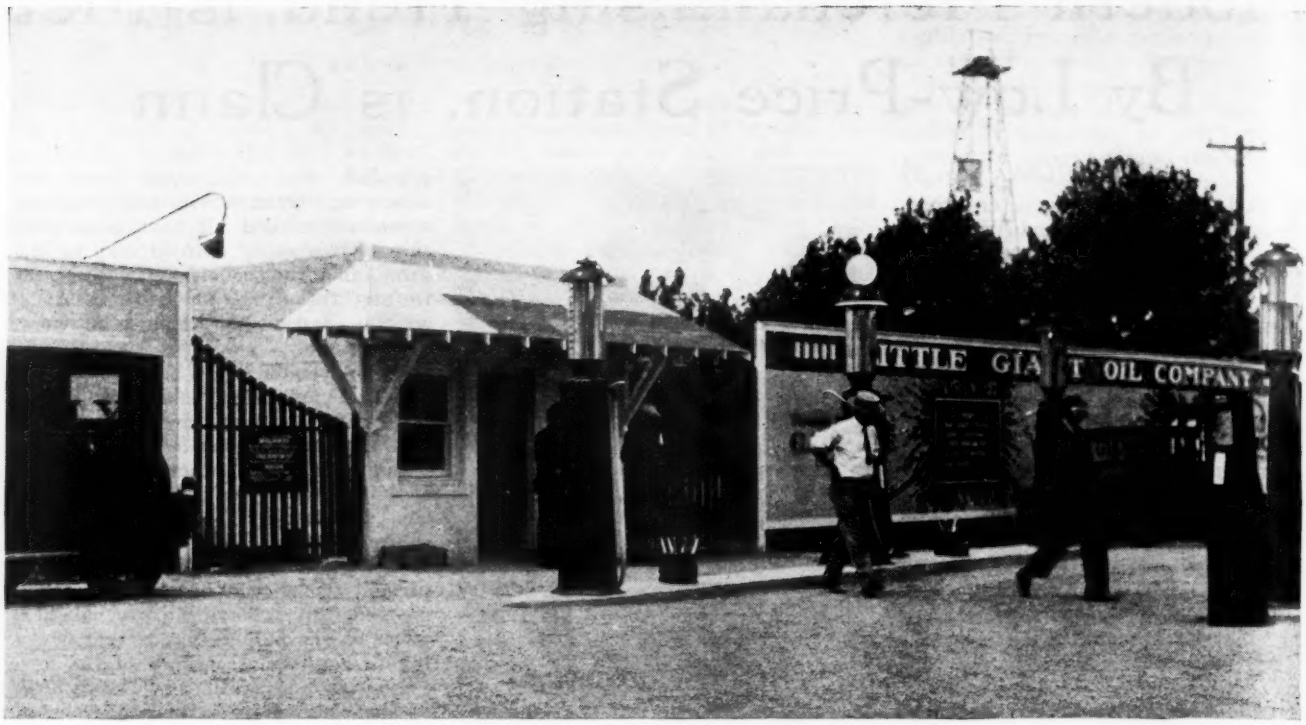
"Why should they be expected to pay the same for gasoline at a fine station in a neighborhood convenient to their homes, as at a station at the outskirts of town where little is offered in the way of service or attractive surroundings?"

The men who have organized the Little Giant Oil Co. believe that the present tendency in retail merchandising generally is having a psychological effect on the public's minds that is going to help its acceptance of the low-price gasoline station. "The growth of the chain store in an indication of the desire of a part of the public to buy as cheaply as it can and still get value in its purchases", is Mr. Kalkhoff's observation. "Right next to our property here is a depot of the ice company that supplies Tulsa. Last Saturday 1100 people came to this depot, most of them in cars, to save 5 cents by buying a 50-pound piece of ice to carry home. The man who goes to a low-price gasoline station does not figure that he is saving 2 cents, or 3 cents, or 4 cents a gallon on gasoline. If he buys five gallons he is saving from 10 to 20 cents. If he buys 10 gallons he is saving from 20 to 40 cents, and that is a sizeable saving.

"In a period of general advancing prices and advancing wages, such as the few years following the war, when many of the gasoline stations of the established oil companies were built, the average man did not shop as closely as he does now. A saving of a few cents here and a few cents there was not so much of a factor. Now we are in a period when the average man's income is not being increased, for some classes it has been reduced. That makes him a closer buyer."

STILL another of Mr. Kalkhoff's observations lead him to believe that the low-price gasoline station is meeting the desires of a good part of the public. That is the fact that the average man is now driving his second or third car, or at any rate he has driven a car long enough that it is no longer a plaything to him, nor a possession in which he takes the pride fussing with and spending money on as a hobby that he did at first.

He believes that a motor car is not much more than transportation to a



This wooden building only a few feet square, is station and office head quarters for the Little Giant Oil Co., a low price bulk station recently opened in Tulsa. This type of building helps keep overhead low.

good part of the public and that its desire is to operate a car as economically as possible, and consequently it will buy its gasoline, and even its motor oil, as cheaply as it can and be reasonably sure it is getting a product up to standard quality.

He believes there may be two quite distinct types of gasoline stations in the future, one the low-price station selling from tank car storage, and perhaps offering greasing, car washing and some of the services of the superstation but at a reduced scale of prices; the other the type of conveniently located station where service is furnished to a high degree, the station catering to that class of motorists to whom price is secondary to other features.

Phillips Airplane Meet Is Postponed

Staff Special

TULSA, Aug. 27.—Frank Phillips, president of the Phillips Petroleum Co., has postponed indefinitely the air meet he had planned for early fall at the Bartlesville, Okla., air port. Mr. Phillips had announced cash prizes totaling $25,000 in addition to a number of valuable trophies for reliability and other straight flying with stunts being barred. The meet was planned when announcement that the Phillips-backed Goebel plane had won the Dole prize in the Honolulu flight.

In view of the tragic loss at sea of three planes, two in the race and a third which undertook to find the lost planes, it was determined that postponement of the meet would be advisable for the present. This was the advice of the National Aeronautical Association.

Crude Stocks July Gain 6,465,000 Barrels

NEW YORK, Aug. 30.—A decrease of 3,272,000 barrels in gasoline stocks at refineries east of California was recorded for July, covering approximately 88 per cent of the country's operating capacity, the American Petroleum Institute reported.

Pipe line and tank farm gross domestic crude stocks east of the Rockies increased 6,465,000 barrels. Stocks of kerosene at refineries increased 129,000 barrels and gas and fuel oil stocks increased 2,071,000 barrels.

Lube oil stocks decreased 99,000 barrels.

Net increase in all refinery stocks, including crude at refineries was 73,000 barrels.

Complete report of the Bureau of Mines for June showed a reduction in gasoline stocks of 5,000,000 barrels, and an increase in crude stocks east of the Rockies of 8,500,000 barrels.

Elk Hill Receivership Terminated

LOS ANGELES, Aug. 27.—Federal Judge Paul J. McCormick, Aug. 26, released the receivership established in March, 1924, covering the Pan American leases in Naval Reserves Nos. 1 and 2 in California. He complimented the receivers, Rear Admiral Harry H. Rousseau and J. Crampton Anderson, stating their work was a "rare example of efficiency and fidelity."

The court said further, "it was remarkable that more than $12,000,000 had been turned over to the government at an average monthly cost of $446 through the activities of the receivers." Mr. Anderson waived his right to a fee and Admiral Rousseau, although retired, said he undertook the duties of the receivership as a public duty.

The receivership came about through court action taking from the E. L. Doheny interests the leases in Elk Hills, on the claim that the leases were illegally awarded to them by former secretary of interior Fall.

Two More Producers In Little River

TULSA, Aug. 30.—Two more wells are now producing in the Little River Pool south of Bowlegs field. The Blackwell Oil and Gas Co.'s diagonal offset, northwest of the discovery well of the pool, made 1830 barrels for the 24 hours ended Monday morning, and the Indian Territory Illuminating Oil Co.'s test, a quarter mile west of the Blackwell well, made 3093 barrels during the same period. The situation was discussed Monday by Umpire Collins meeting with his advisory committee of operators, and it was explained by the umpire that the new wells in Little River will be permitted to flow for 3 days before being pinched in to 100 barrels per day, under the agreement. This agreement runs to October 5.

The views of Senator Wm. E. Borah relating to Oil Conservation, as expressed in his speech at Denver, June 28, 1927:

"If the waste and exhaustion of our natural wealth simply interrupted the gathering of wealth by the few immediately engaged, that would be unfortunate enough, but it embarrasses and impoverishes a whole people and puts the people and the government alike in jeopardy. The problem is in every sense of national import and of the utmost public concern."

Universal Oil Products Company
Owner of the Dubbs Process
310 South Michigan Ave
Chicago, Illinois

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended August 26 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	North La.-Ark.	Total Week Ended Aug. 26	Total Week Ended July 29
Plants Reporting	23	46	41	14	124	124
Crude Capacity (bbls.)	106,200	165,900	144,300	53,700	470,100	470,100
Cracking Capacity	29,000	45,800	15,750	20,200	110,750	110,750
Da. Av. Crude Runs	56,483 — 10.7	116,354 + 2.8	63,886 — 6.1	44,979 — 9.1	281,702 — 4.2	299,568
Da. Av. Other Oils	4,676 + 24.9	— 270 0	6,629 — 14.5	1,471 + 12.5	12,506 — 5.8	10,701
GASOLINE—Gallons						
Stocks, Aug. 19	10,803,000	40,161,000	16,043,000	3,726,000	70,733,000	72,658,000
Prod. 8-19 to 8-26	8,195,000 — 11.2	17,372,000 + 3.0	8,165,000 + 6.3	4,360,000 — 0.2	38,092,000 — 0.1	38,562,000
Ship. 8-19 to 8-26	8,942,000 + 3.7	16,698,000 — 0.6	8,454,000 + 3.4	4,834,000 + 11.9	38,928,000 + 2.7	40,715,000
Stocks, Aug. 26	10,056,000 — 6.9	40,835,000 + 1.7	15,754,000 — 1.8	3,252,000 — 12.7	69,897,000 — 1.2	70,505,000
Ratio Sales to Prod.	109.1%	96.1%	103.5%	110.9%	102.2%	105.6%
KEROSENE—Gallons						
Stocks, Aug. 19	4,175,000	4,520,000	2,350,000	867,000	11,912,000	12,438,000
Prod. 8-19 to 8-26	1,471,000 — 20.1	2,871,000 + 2.2	1,343,000 — 9.5	454,000 — 29.1	6,139,000 — 9.4	6,789,000
Ship. 8-19 to 8-26	1,629,000 + 3.8	3,078,000 — 4.2	1,573,000 — 1.6	775,000 + 12.2	7,055,000 — 0.2	6,856,000
Stocks, Aug. 26	4,017,000 — 3.8	4,313,000 — 4.6	2,120,000 — 9.8	546,000 — 37.0	10,996,000 — 7.7	12,371,000
Ratio Sales to Prod.	110.7%	107.2%	117.1%	170.7%	114.9%	101.0%
STOVE DISTILLATE—Gallons						
Stocks, Aug. 19	4,562,000	5,560,000	1,720,000	49,000	11,891,000	7,578,000
Prod. 8-19 to 8-26	127,000 — 22.1	956,000 — 12.1	388,000 + 5.1	65,000 + 4.8	1,536,000 — 8.6	1,229,000
Ship. 8-19 to 8-26	102,000 0	517,000 + 0.6	215,000 + 3.4	70,000 — 37.5	904,000 — 3.4	917,000
Stocks, Aug. 26	4,587,000 + 0.5	5,999,000 + 7.9	1,893,000 + 10.1	44,000 — 10.2	12,523,000 + 5.3	7,890,000
Ratio Sales to Prod.	80.3%	54.1%	55.4%	107.7%	58.9%	74.6%
GAS OIL—Gallons						
Stocks, Aug. 19	9,862,000	37,760,000	16,143,000	9,813,000	73,578,000	70,744,000
Prod. 8-19 to 8-26	1,995,000 + 8.1	2,118,000 + 54.5	1,334,000 + 21.9	1,914,000 + 0.9	7,361,000 + 18.6	6,896,000
Ship. 8-19 to 8-26	2,049,000 + 60.6	1,239,000 — 10.3	1,220,000 +164.6	1,636,000 + 6.6	6,144,000 + 32.0	7,182,000
Stocks, Aug. 26	9,808,000 — 0.5	38,639,000 + 2.3	16,257,000 + 0.7	10,091,000 + 2.8	74,795,000 + 1.7	70,458,000
Ratio Sales to Prod.	102.7%	58.5%	91.5%	85.5%	83.5%	104.1%
FUEL OIL—Gallons						
Stocks, Aug. 19	13,112,000	40,461,000	32,577,000	12,857,000	99,007,000	86,373,000
Prod. 8-19 to 8-26	5,606,000 — 14.4	7,619,000 + 8.3	8,416,000 — 9.2	6,310,000 — 15.0	27,951,000 — 7.7	31,203,000
Ship. 8-19 to 8-26	5,583,000 — 21.7	5,790,000 + 5.8	8,345,000 — 3.5	8,278,000 + 16.3	27,996,000 — 1.3	26,055,000
Stocks, Aug. 26	13,135,000 + 0.2	42,290,000 + 4.5	32,648,000 + 0.2	10,889,000 — 15.3	98,962,000 — 0.05	91,521,000
Ratio Sales to Prod.	99.6%	76.0%	99.2%	131.2%	100.2%	83.5%

Gasoline Produced by Various Methods, Week Ended August 26

	Kansas	% of Total	Oklahoma	% of Total	Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	5,487,000	67.0	13,889,000	80.0	6,398,000	78.4	1,505,000	34.5	27,279,000	71.6
Cracked	2,174,000	26.5	2,422,000	13.9	1,330,000	16.3	2,176,000	49.9	8,102,000	21.3
Natural	534,000	6.5	1,061,000	6.1	437,000	5.3	679,000	15.6	2,711,000	7.1
Total	8,195,000		17,372,000		8,165,000		4,360,000		38,092,000	

+ or — columns are changes over previous week.

Crude Runs Cut; Gasoline Stocks Reduced

Staff Special by Telegraph
TULSA, Aug. 30

MID-CONTINENT refiners reduced their crude runs the last week in August. Reports gathered by NATIONAL PETROLEUM NEWS covering operations of 124 plants showed a reduction of 12,000 barrels daily average during the week ending Aug. 26. Average runs for the week were 281,702 barrels as compared with 294,041 barrels for the week ending Aug. 19. Charges of partly refined oil to stills also were reduced slightly.

Shipments of gasoline from all reporting plants increased a full million gallons during the week to 38,928,000 gallons. As a result of the lower rate of production and the in-

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Aug. 26. Change in stocks figures from July 29.

GASOLINE

	Gallons
Production	151,943,000
Shipments	152,551,000
Net change in stocks	—608,000
Ratio sales to production	100.4%

KEROSENE

Production	26,045,000
Shipments	27,420,000
Net change in stocks	—1,375,000
Ratio sales to production	105.3%

STOVE DISTILLATE

Production	8,050,000
Shipments	3,417,000
Net change in stocks	+4,633,000
Ratio sales to production	42.4%

GAS OIL

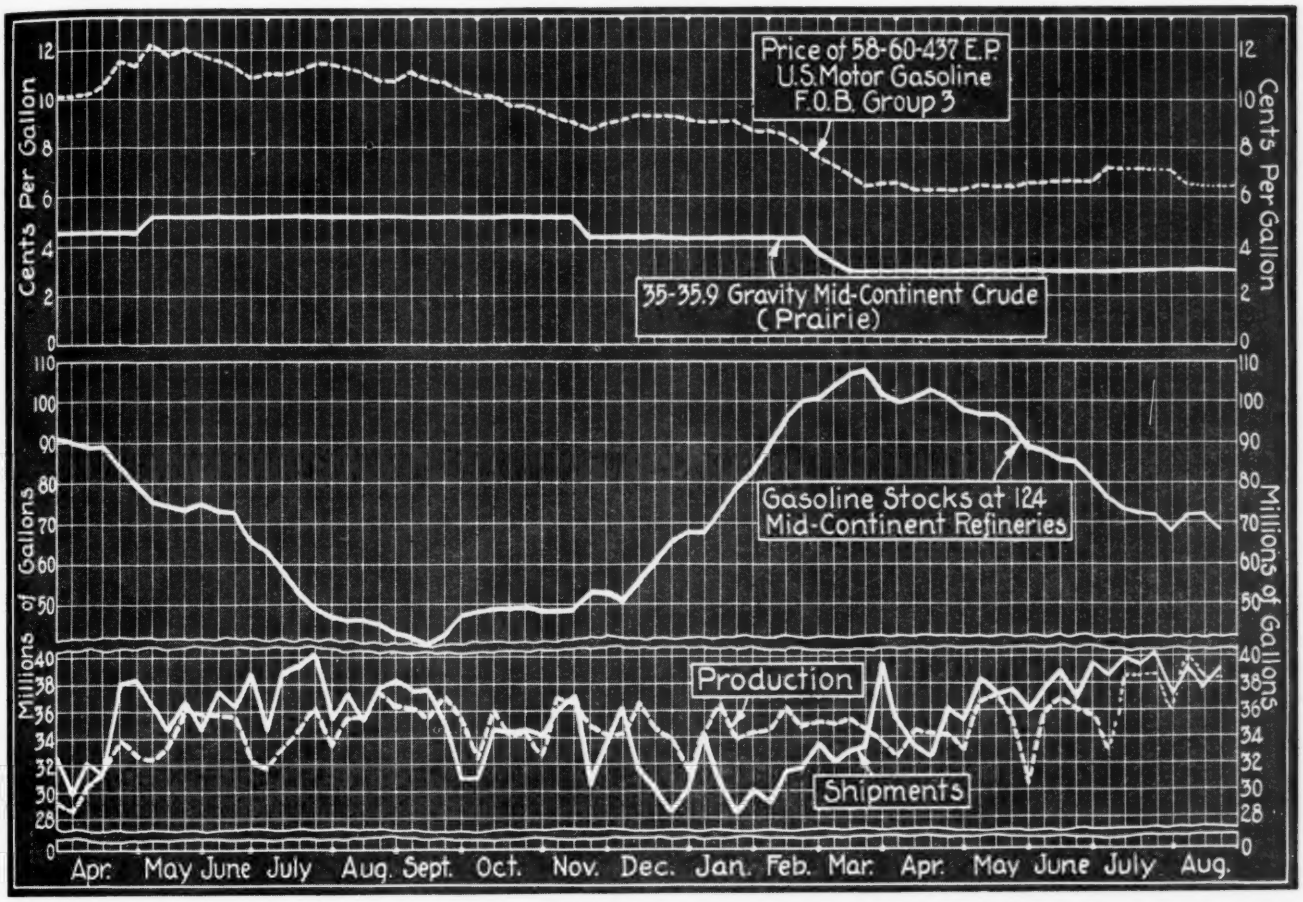
Production	26,333,000
Shipments	21,996,000
Net change in stocks	+4,337,000
Ratio sales to production	83.5%

FUEL OIL

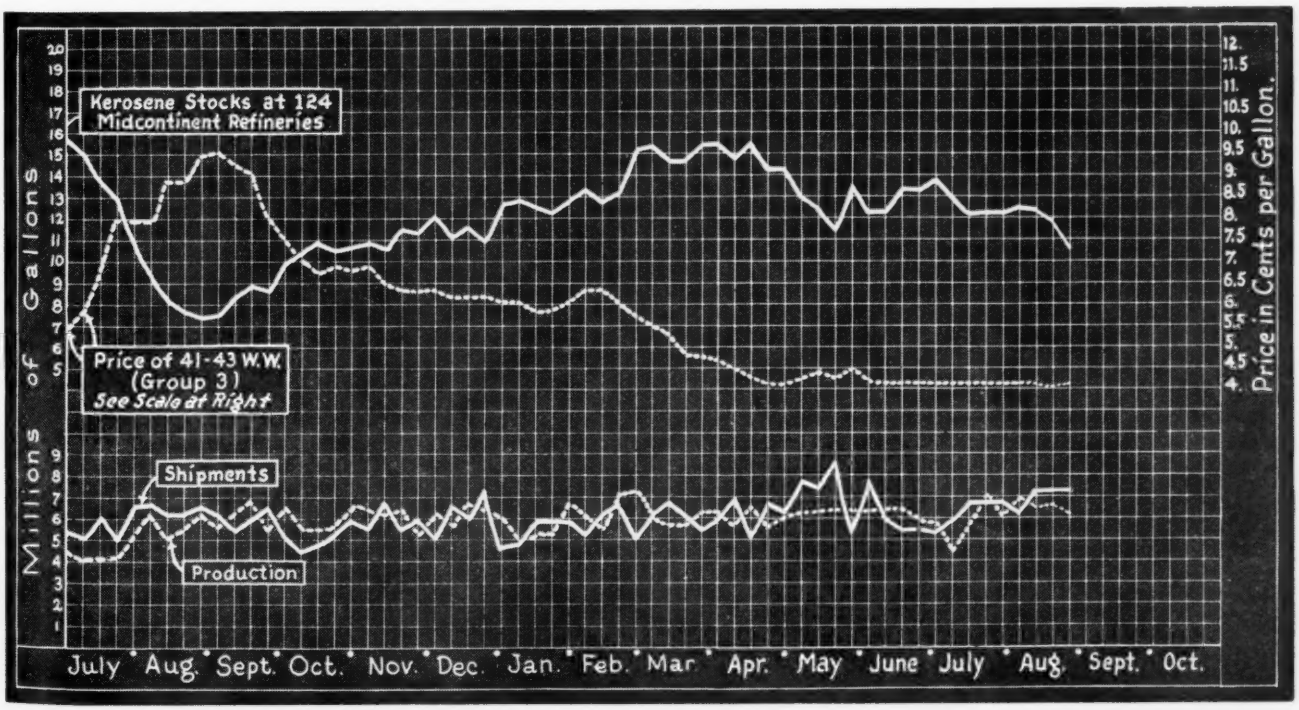
Production	116,224,000
Shipments	108,783,000
Net change in stocks	+7,441,000
Ratio sales to production	93.6%

Barometer of Mid-Continent Refinery Market—Week Ending August 26

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 124 Plants to National Petroleum News

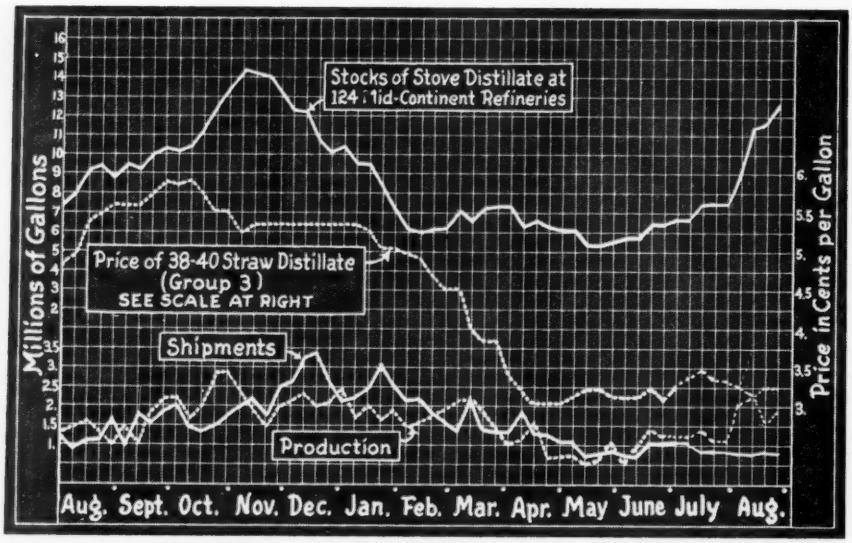

Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Cents Per Gallon
Gasoline Stocks at 124 Mid-Continent Refineries
Millions of Gallons
Production
Shipments
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug.

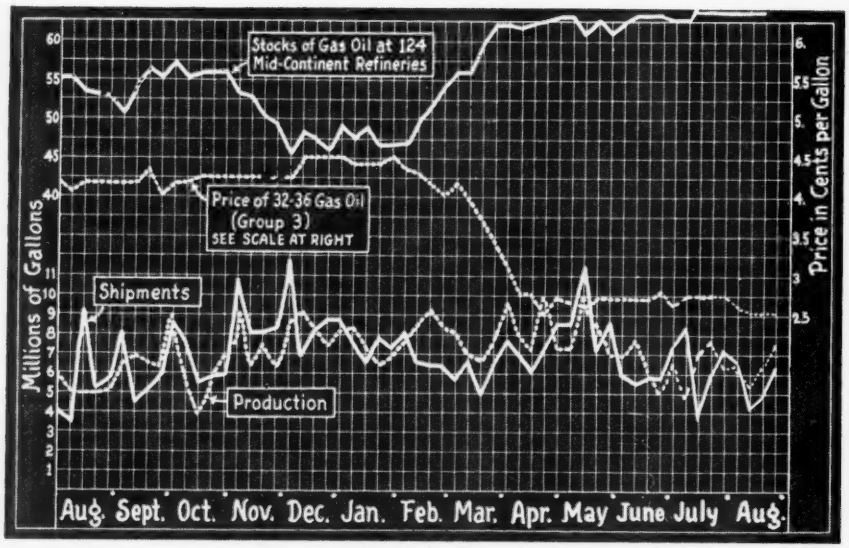
Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date shown in table on opposite page.

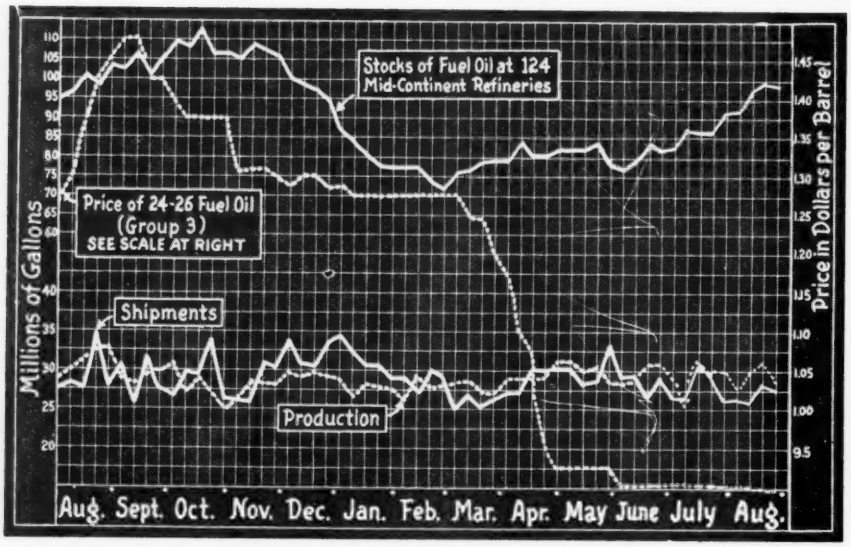

Kerosene Stocks at 124 Midcontinent Refineries
Price of 41-43 W.W. (Group 3) See Scale at Right
Millions of Gallons
Price in Cents per Gallon.
Shipments
Production
July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct.

Barometer of the Mid-Continent Refinery Market

Week ending Aug. 26, 1927


Stocks of Stove Distillate at 124 Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) SEE SCALE AT RIGHT
Shipments
Production
Millions of Gallons
Price in Cents per Gallon
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug.


Stocks of Gas Oil at 124 Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) SEE SCALE AT RIGHT
Shipments
Production
Millions of Gallons
Price in Cents per Gallon
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug.


Stocks of Fuel Oil at 124 Mid-Continent Refineries
Price of 24-26 Fuel Oil (Group 3) SEE SCALE AT RIGHT
Shipments
Production
Millions of Gallons
Price in Dollars per Barrel
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug.

crease in business gasoline stocks were reduced 900,000 gallons to 69,897,000 gallons at all reporting plants. It is the first time in the past three weeks refiners have been able to draw on their reserves to meet current demands.

Cuts in gasoline stocks were made in all states except Oklahoma. Kansas refiners reduced their stocks 750,000 gallons to 10,056,000, while Oklahoma refiners increased their stocks 670,000 gallons. The Oklahoma group only reported a gain in crude runs and loss in gasoline shipments. Oklahoma runs increased 3,000 barrels daily average to 116,354 barrels per day.

North Texas refiners reduced their crude runs 4,000 barrels daily average to 63,886 barrels per day and enjoyed an increase of 300,000 gallons in gasoline shipments, permitting a decrease in gasoline stocks by a like amount to 15,754,000 gallons. North Louisiana and Arkansas refiners cut crude runs more than 5,000 barrels daily average to 44,979 barrels per day and, with an increase in shipments, were able to reduce their gasoline stocks 474,000 gallons to 3,252,000 gallons. Gasoline stocks in this group are now less than enough to supply current demands a single week. For the entire Mid-Continent field gasoline stocks on Aug. 26 represented 12.5 days' supply at the current rate of shipments.

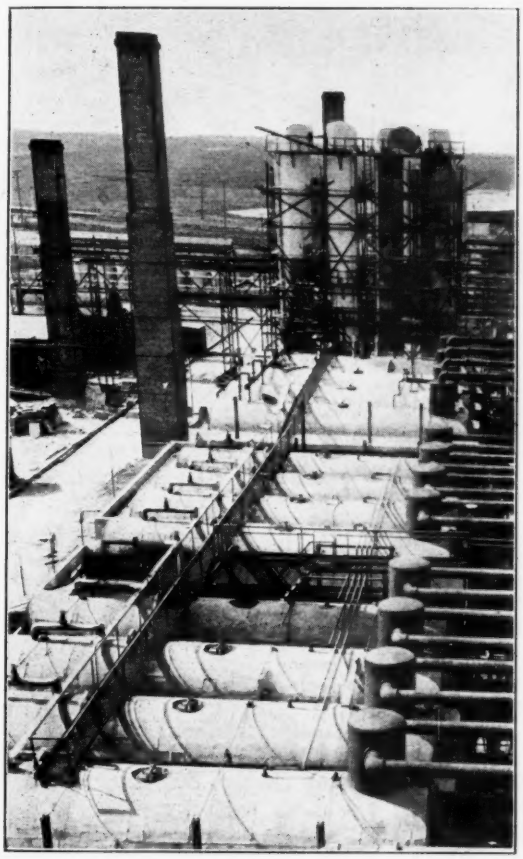
Shipments of kerosene from all reporting plants were about equal to those of the previous week, but production was reduced over 600,000 gallons, or 9.4 per cent, by the cut in crude runs. Total production for the week was 6,139,000 gallons and shipments 7,055,000 gallons permitting a reduction of 900,000 gallons in inventories. Total stocks Aug. 26 were 10,996,000 gallons, representing about 11 days' supply. Every group in the field drew on kerosene storage.

Distillate demand was largely unchanged for the week at 904,000 gallons, while production was cut slightly to 1,536,000 gallons allowing the usual summer increase in stocks. Total stocks Aug. 26 were 12,523,000 gallons. A year ago on Aug. 27 total distillate stocks were about 8,000,000 gallons.

Gas oil stocks increased 1,200,000 gallons to 74,795,000 gallons during the week, in spite of a good increase in shipments. Stocks of fuel oil were cut for the first time in a month, however, in spite of the slight reduction in demand. Fuel oil production was reduced 2,300,000 gallons or 7.7 per cent to 27,951,000 gallons as a result of lower crude runs. Total stocks at the close of the week were 98,962,000 gallons.

"Saved Over 50% In Labor Costs to Install

—and gives far better insulation!"



Gimco
ROCK WOOL

for all refining insulation purposes

GIMCO ROCK WOOL consists entirely of fiberized free silica, which has been formed by the melting and blowing of an unusual calcium silicate rock, found only near Alexandria, Indiana.

It is available in the following shapes and forms:

1. Flexfelt—standard shapes or cut to fit
2. Gimco—K-14 Insulating Cement
3. Gimco Rock Wool Insulating Block
4. Gimco Rock Wool Cork for Cold Storage Insulation.

EVERY refiner who has used GIMCO ROCK WOOL FLEXFELT tells this same story. He is astonished at the ease with which he can complete his insulation, trimming and cutting the blanket-like strips so that they fit easily and quickly into the most difficult corners and angles and curves. It means a tremendous saving in installation costs—and an end to his "hot and cold" problems.

FLEXFELT

FLEXFELT (Gimco Rock Wool that has been felted) is generally accepted as the simplest, most efficient and most practical insulating material known. It comes in blanket form, in varying widths, compressed to varying thicknesses between metal fabric of just the right strength.

FLEXFELT has the highest degree of efficiency according to Bureau of Standards tests—chemically stable; free from shot; absolutely fireproof; no breakage in shipment.

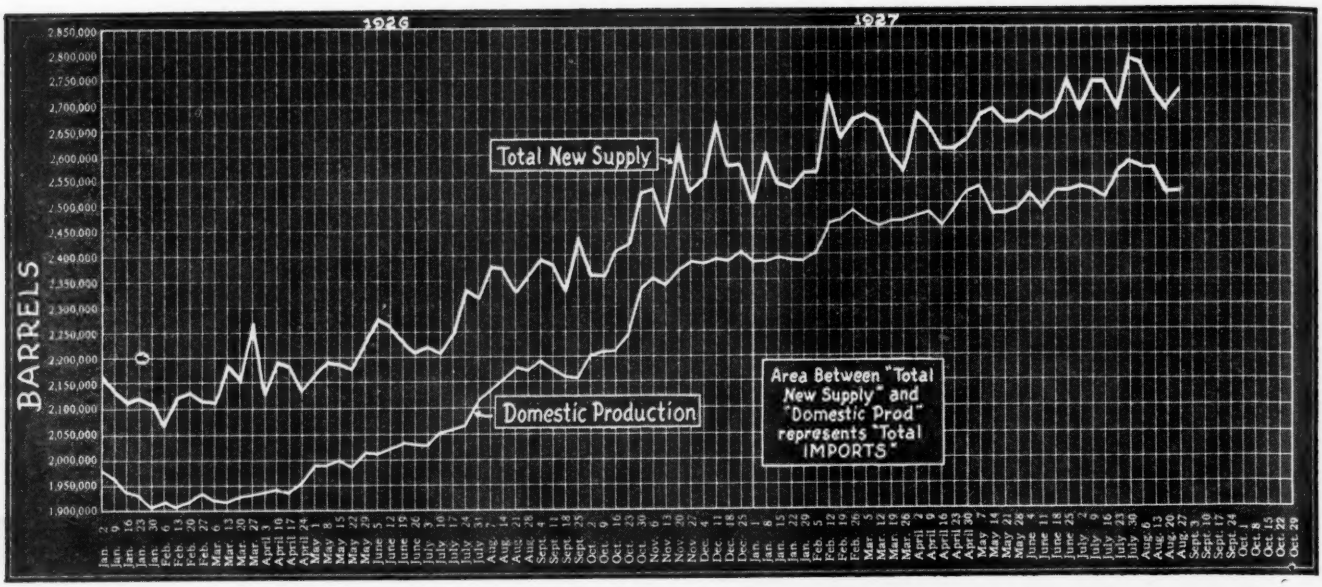
We have a complete line of heat and cold insulation. Our Engineering Department will gladly advise with you. Write for your copy of our new catalog—it gives the full story of ROCK WOOL. Or, better still, send us your installation drawings or specifications so that we may quote you prices.

General Insulating & Mfg. Co.

Alexandria, Indiana

Rock Wool Capital of the World

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	Aug. 27	Aug. 20
Production east of Rockies	1,879,000	1,896,800
Decrease		17,800
Total production in U. S.	2,506,900	2,518,400
Decrease		11,500
Crude oil imports	214,429	172,286
Increase		42,143
Total crude supply	2,721,329	2,690,686
Increase		30,643

OKLAHOMA

	Aug. 27	Aug. 20
North Braman	3,250	3,400
South Braman	2,350	2,450
Blackwell	4,000	3,850
Hubbard	5,000	5,000
Thomas	4,300	4,450
Tonkawa	19,850	19,700
Garber	10,600	11,050
Burbank	37,900	38,450
Osage, outside Burbank	31,250	31,300
Watchorn	1,800	1,800
Cushing	21,200	21,450
Yale Jennings	9,850	10,100
Davenport	3,000	2,900
Bristow-Slick	25,150	25,500
North Okmulgee	16,350	16,550
Lyons-deaner	5,100	5,100
Stroud	1,200	1,250
Cromwell	12,300	12,300
Papoose	6,350	6,300
Wewoka	16,600	17,300
Seminole	281,400	278,800
Earlsboro	154,900	173,100
Duncan district	6,950	7,000
Graham	7,200	7,200
Fox	1,950	1,950
Healdton	15,000	15,000
Hewitt	9,700	9,700
Scholem Alacham	16,100	16,400
Others	67,650	67,650
Total Oklahoma	798,250	817,050
Decrease		18,800

KANSAS

Greenwood County	34,000	34,100
Florence-Covert	1,600	1,600
Peabody-Elbing	3,850	3,800
Eldorado-Towanda	14,000	13,900
Augusta-Fox-Bush	4,250	4,350
Rainbow Bend	2,200	2,250
Russell	2,450	2,350
Churchill	13,650	14,450
Others	29,000	27,800
Total, Kansas	105,000	104,600
Increase		400

NORTH LOUISIANA

	Aug. 27	Aug. 20
Homer	4,750	4,750
Haynesville	7,200	7,200
Caddo, light	15,950	17,800
Caddo, heavy	5,100	5,150
De Soto, Red River	4,050	4,050
Elm Grove	650	650
Bellevue	1,200	1,150
Cotton Valley	5,400	5,400
Urania	9,800	9,600
Pleasant Hill	750	800
Total, North Louisiana	54,850	56,550
Decrease		1,700

ARKANSAS

El Dorado	5,750	5,800
Smackover, light	10,300	10,450
Smackover, heavy	80,000	81,200
Stephens	1,250	1,300
Nevada	2,250	2,400
Lisbon	3,300	3,300
Others	100	100
Total, Arkansas	102,950	104,550
Decrease		1,600

TEXAS (OUTSIDE GULF COAST)

Panhandle District

Hutchinson County	80,350	78,450
Carson County	9,550	9,950
Gray County	10,450	9,800
Wheeler County	1,650	1,550
Others	200	100
Total, Panhandle District	102,200	99,850
Increase		2,350

North Texas

Burkburnett	13,200	13,350
Electra	12,600	12,750
Iowa Park and K-M-A	2,500	2,550
Wilbarger	12,550	12,800
Archer County	27,000	27,150
Montague-Cooke	16,500	16,750
Others	700	700
Total, North Texas	85,050	86,050
Decrease		1,000

West Central Texas

Stephens County	8,550	8,750
Eastland-Desdemona	8,750	8,500
Brown County	24,000	24,500
Coleman County	1,000	1,000
Callahan County	3,250	3,350
Shackelford County	6,950	7,250
Young County	9,950	10,200
Throckmorton County	1,400	1,550
Palo Pinto County	800	800
Others	1,350	1,400
Total, West Central Texas	66,000	67,300
Decrease		1,300

West Texas

Jones County	1,700	1,800
Mitchell and Scurry Counties	3,900	3,800
Howard County	3,200	3,100
Reagan County	25,150	25,200
Crane & Upton Counties	127,550	118,800
Crockett County	1,450	1,350
Pecos County	6,000	5,100
Others	5,250	3,950
Total, West Texas	174,200	163,100
Increase		11,100

East Central Texas

Mexia	9,600	9,650
Currie	700	500
Richland	900	1,000
Wortham	2,850	3,000
Corsicana-Powell	14,950	14,950
Nigger Creek	2,800	2,950
Total, East Central Texas	31,800	32,050
Decrease		250

Southwest Texas

Luling	16,950	17,200
Lytton Springs	1,900	2,100
Somerset	900	900
Laredo District	10,000	10,850
Piedras Pintas	50	50
Others	500	500
Total, Southwest Texas	30,300	31,600
Decrease		1,300
Total, Texas—(Outside Gulf Coast)	489,550	479,950
Increase		9,600

GULF COAST

Coastal Texas

West Columbia	8,950	9,100
Damon Mound	900	900
Big Creek	3,000	2,800
Boling	1,600	1,700
Blue Ridge	2,750	2,850
Pierce Junction	8,100	5,900
Humble	2,500	2,900
Goose Creek	8,300	8,200
South Liberty	2,800	2,800
Hull	14,850	15,250
Saratoga	1,200	1,150
Batson	1,300	1,350
Sour Lake	4,200	4,250
Spindletop	53,000	55,100
Orange County	5,500	5,200
Others	4,150	4,500
Total, Coastal Texas	123,100	123,950
Decrease		850

Coastal Louisiana

Vinton	4,900	4,850
Lockport	5,300	5,550
Evangeline	1,050	1,000
Edgerly	2,200	2,300
Others	900	1,000
Total, Coastal Louisiana	14,350	14,700
Decrease		350
Total, Gulf Coast	137,450	138,650
Decrease		1,200

ROCKY MOUNTAIN

Wyoming

Salt Creek	33,000	35,300
Grass Creek	2,650	2,650
Elk Basin	1,000	1,050

(*Continued on Page* 43)

42 *Internationals* Out to get the Oil

WHEN oil is "brought in," tanks must be on the ground to hold it. The great Southwest oil country comes to Black, Sivalls & Bryson for the tanks and Black, Sivalls & Bryson comes to International Harvester for the motor trucks that deliver the goods.

Forty-two Internationals now make up this fine fleet of trucks. Thirty-six are 2-ton Heavy-Duties, five are 3-ton Heavy-Duties and one is a light ¾-ton "Special Delivery." Their job is to haul the huge tonnage of tank material from the many field stations out to the new wells. The average trip is 75 miles and heavy loads frequently go 300 miles over bad roads and no roads. At times delivery continues night and day for weeks; drivers are changed, but the Internationals go on.

When more trucks are needed, Black, Sivalls & Bryson buys more Internationals. One reorder was for 18 trucks and now comes an order for another sub-fleet of 9. Experience has taught them that International Truck Investment means sure performance and unequaled service. That is the record of Internationals everywhere. They will serve *you* as well. Catalogs will be sent on request.

INTERNATIONAL HARVESTER COMPANY
OF AMERICA
606 SO. MICHIGAN AVE. (INCORPORATED) CHICAGO, ILL.

INTERNATIONAL HARVESTER COMPANY TRUCKS

Seminole Production Fails To Reach Figure Allowed

TULSA, Aug. 27

THERE is more than one problem to be considered in handling the proration of production in an oil field. At the outset there is the problem of getting the production down to the figure set as the maximum. Then, nearly always, comes the problem of keeping it up to that maximum.

Seminole district has been up against the latter. For the past two weeks it has not only been under the 450,000-barrel figure agreed upon as the maximum for the four principal pools, excluding Little River, but it is far enough under to indicate that natural decline stepped in and gave the umpire quite a helping hand.

The latest figures issued by Umpire Collins that are at hand at the end of the week are those for the 24-hour period ended Aug. 24. These are as follows:

	Potential	Allowed	Actual
Earlsboro	172,855	155,574	152,052
Bowlegs	191,760	172,590	162,970
Searight	33,820	30,436	31,328
Seminole	86,041	77,434	75,754
	484,476	436,034	422,104

For the 24 hours ended Friday morning Earlsboro was to be produced at 100 per cent capacity, the same as Bowlegs had been the previous week. The figures for the 24-hour period preceding this wide open production for the wide open period itself and for the succeeding 24 hours are set forth below:

	Thursday	Friday	Saturday
Bowlegs	163,997	162,953	164,983
Earlsboro	155,623	154,999	156,790
Seminole	77,723	79,070	81,394
Searight	31,459	30,897	30,688
	429,102	427,747	433,855

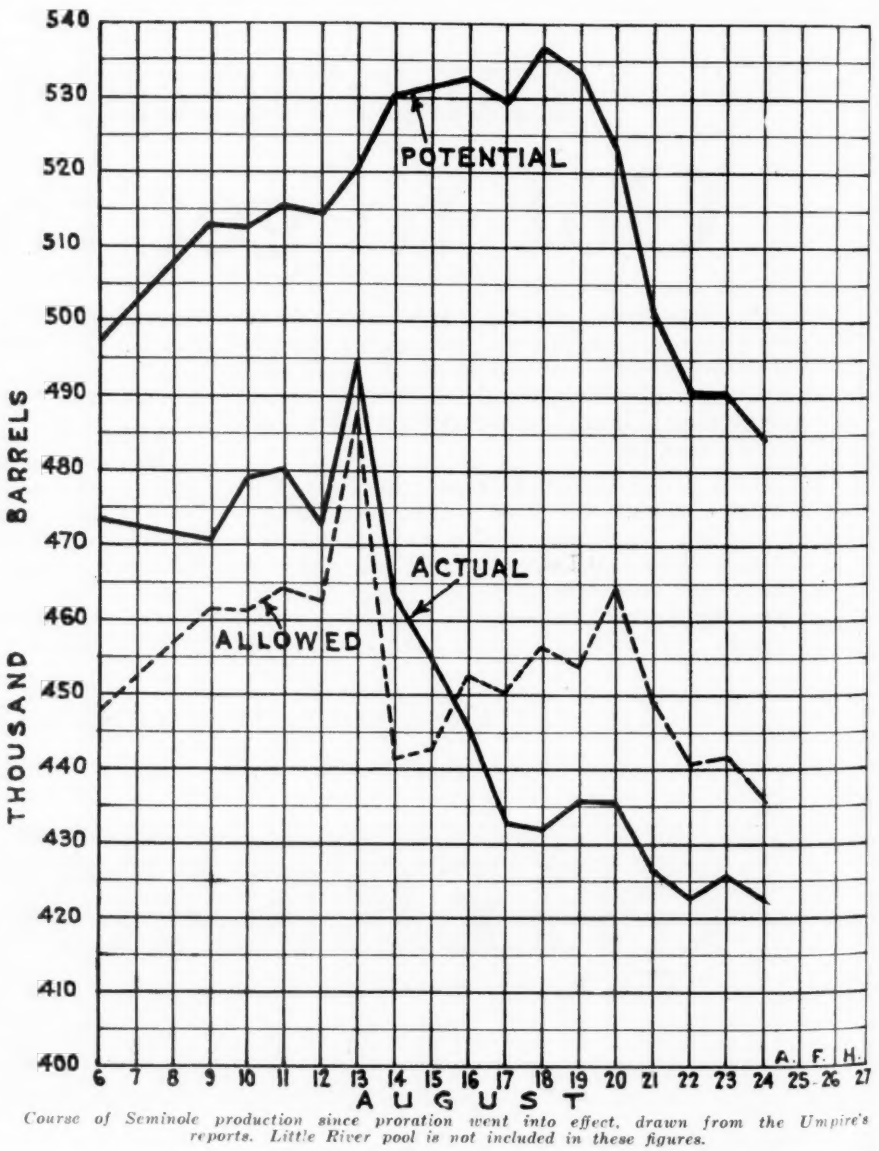
The foregoing figures are not those compiled by the umpire, but are from scout reports, which, however, agree closely with those of the umpire on any day.

It is noteworthy that the district made its increase on the day following the 100 per cent test. The operators have, however, accumulated such a bunch of credits that they can run over the allowed amounts without inviting a rebuke from the corporation commission. The umpire shows that on Aug. 24 the producers were "short" 102,352 barrels, that is, they failed by that much of making what he "permitted" them during the time proration has been in effect.

Undoubtedly the decline has been more rapid than was figured on the basis of the decline curve taken as the basis when proration started. That curve was projected at a uniform rate whereas the decline has been on a steeper pitch than was estimated. Hence, the figure for the potential of the district has been placed too high.

THE long-hoped for decline is no longer being tested for its authenticity. There will be upward swings from time to time and the production for the whole district probably will not lose much more for several weeks. This conclusion is based upon the fact that completions in the Earlsboro field will be bunched over a period of several weeks. Latest check on this field shows about 175 wells drilling. Of these 18 were below 4,000 feet, or near the completion stage; 43 were drilling between 3500 and 4000 feet; 40 were between 3000 and 3500 feet and 40 were between 2000 and 3000 feet. Thus there were 61 that should be completed within 30 days or so and even assuming that a fourth of them will be failures—which is too high a percentage—there would be at 1,000 barrels per well average 45,000 barrels new production. This should pretty effectively flatten out the decline curve and for short periods show increases in daily production.

In general, however, things are looking brighter so far as Seminole is concerned. Only Little River is on the horizon as an area to be built up into high production and that is the subject of another agreement to restrict production. The plan for that field is of chief value to the operators concerned, rather than to the whole industry. The restricting of production to 100 barrels daily will relieve them of some tankage construction.



Course of Seminole production since proration went into effect, drawn from the Umpire's reports. Little River pool is not included in these figures.

Wilcox Sand Pool in Lincoln County Opened by Shaffer O. & R. Co.

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, Okla., Aug. 27

IN A week marked by few notable completions in Mid-Continent territory, Shaffer Oil & Refining Co.'s test that opens a new Wilcox sand pool in Lincoln county was the outstanding development. The well, in the SEc SW of 31-17N-5E made 1942 barrels during the 24 hours ended August 24 and had declined at the end of the week to around 1,400 barrels. It had made considerable oil before it hit the maximum figure. Top of the Wilcox was found at 4210 feet and the present total depth is 4240 feet.

The new pool is about six miles south of the town of Cushing. Structural evidence indicates that it will be a pool of small extent and similar in both this respect and in richness to the many little Wilcox pools found west and southwest of Tulsa, excepting always the Seminole district fields which answer to no previously established rules.

Seminole continued on its downward course during the week and not even an order from the corporation commission would get the production up to what the umpire says the companies are permitted to produce. The whole district ended the week with Saturday morning's figure 2,500 barrels under that for the previous Saturday and this was up a little from the average through the week, due to completions in Earlsboro and revamping of older wells elsewhere.

LITTLE RIVER at this writing is about to burst into bloom. Blackwell Oil & Gas Co.'s No. 1 Nitey, in the southeast of 25-8-6 is due to be the first completion of the new crop of wells started as the result of the Indian Territory Illuminating Oil Co.'s completing a big producer in the northwest of 1-7-6 last June. The Blackwell well is a diagonal northwest offset to the discovery. Although it found the top of the Viola formation 199 feet lower structurally than did the discovery, the hole was at the week end standing full of oil and had made two or three small flows. It was bottomed at 4231 feet and was to be completed within a day or two.

The lower position structurally of this well seemingly doesn't indicate a thing. In that respect it runs true to the form of the general Seminole district where extreme variations in structure from one location to another are common. All the other wells around the Little River discovery which had reached the top of the Viola lime at the end of the week were also lower than the discovery, although not as much as was the Blackwell's well. The Indian Territory company's No. 1 Dungan, in the SE SW SE of 35-8-6 is two locations west of the Blackwell's near-completion and it is 92 feet lower on the Viola than the discovery. In this case the formations after dipping steeply between the discovery and its diagonal northwest offset rise again to the west.

THE I. T. I. O.'s No. 1 Nitey, which is a direct west offset to the discovery, was 95 feet lower on the Viola. This is in the northeast corner of 2-7-6.

Within two weeks there should be a half dozen completions in this pool. On Thursday last there were an even 100 operations in the immediate territory surrounding the Little River discovery, about a six or seven million dollar campaign.

The chief interest to the industry as a whole right now is whether the agreement between producers in the Little River field will be carried out. That agreement pledges the operators to restrict production in this field to 100 barrels per well. Thus the Blackwell Oil & Gas Co., which will have the first completion, barring accidents, will produce only that amount from its offset and the I. T. I. O. will pinch in its discovery, which still is making 7800 barrels daily, to the same figure. At the end of the week the word was that the umpire had had recent expressions from both the Blackwell and the I. T. I. O. that they would go through with their part of the bargain.

THE general Seminole district went through the week without notable completions. No extensions to present production were effected and large wells were absent from the list of new producers. The best was the Independent Oil & Gas Co. and Margay Oil Co. No. 2 Odell in the SE SW SE of 4-9-5, northwest part of the Earlsboro pool.

This hole, bridged several weeks ago, was finally cleaned out and made 4,885 barrels in 24 hours. Another boost to the Earlsboro field was the same company's No. 3 Odell which was put on air lift and made 3,800 barrels.

Several miles east of the original Seminole pool, Sinclair Oil & Gas Co. and Phillips Petroleum Co. have a Gilcrease sand producer in the SEc SW NW of 17-9-7 and made, at its highest, 247 barrels in 21 hours with 12,900,000 feet of gas. This well was drilled to the Wilcox sand some time ago and found water. It was then plugged back to the Gilcrease, found at 3421-87 feet. The Sinclair company will lay a line to the Seminole district to use the gas in operations there.

In Payne county one of the wildcats that has been an important test for a long while looks less important. This is the Marland Oil Co.'s No. 1 Lemon, in the center of the SE NW

Drilling Operations in Oklahoma, Kansas and Texas, Week Ended August 27, 1927

	August 27 Week Ended					August 20				
	Loc.	Rigs	Drg.	S.D.	Total	Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Burbank	2	3	5	9	19	1	3	6	8	18
Other Osage	9	6	18	6	39	10	6	15	8	39
Bristow-Cushing	5	3	40	10	58	3	4	40	11	58
North Oklahoma	8	7	59	39	113	9	6	55	46	116
South Oklahoma	13	14	114	33	174	12	11	117	34	174
Muskogee	..	9	25	13	47	..	5	23	14	42
Okmulgee-Bristow	8	41	60	22	131	8	36	65	18	127
Seminole District	38	46	547	37	668	31	61	556	39	687
Total Oklahoma	83	129	868	169	1,249	74	132	877	178	1,261
KANSAS	32	52	122	70	276	30	49	128	62	269
TEXAS										
Central	..	84	190	127	401	..	66	188	119	373
East	..	..	..	..	..	..	..	7	5	12
Panhandle	..	89	101	109	299	..	95	113	115	223
N. Central	..	39	93	33	165	..	29	113	29	171
West	..	111	173	95	379	..	115	178	94	387
Laredo	..	1	25	19	45	..	1	25	19	45
Total Texas	..	324	582	383	1,289	..	306	624	381	1,211
GRAND TOTAL	115	505	1,572	622	2,814	104	487	1,629	621	2,741

Seminole District Production by Companies and Leases, August 26 and August 19, 1927

Company	Farm	S.T.R.	Aug. 26th No. Wells	Aug. 26th Prod.	August 19th No. Wells	August 19th Prod.
BOWLEGS						
Amerada	Rascoe	15- 8-6	8	7,020	8	6,595
Atlantic	Baker	1- 8-6	4	2,620	4	2,230
Atlantic	Fleet	23- 8-6	4	2,330	4	2,515
Atlantic	Grayson	12- 8-6	1	2,310	1	2,271
Atlantic	A. Jones	16- 8-6	4	261	4	270
Atlantic	C. Jones	9- 8-6	1	2,663	1	2,830
Total Atlantic			14	10,184	14	10,118
Barnsdall	McNac	28- 8-6	1	60	1	60
Barnsdall	Murrow	11- 8-6	3	2,416	3	1,546
Total Barnsdall			4	2,476	4	1,606
Carter	Bowlegs	15- 8-6	3	2,165	2	2,295
Carter	Harjoche	15- 8-6	6	3,075	6	3,615
Carter	Hilly	23- 9-6	1	2,000	1	2,010
Carter	McGeisey	15- 8-6	1	0	1	76
Carter	Walker	15- 8-6	2	1,280	2	1,355
Carter	Wise	23- 8-6	9	10,005	9	11,165
Total Carter			22	18,515	21	20,516
Empire	Lacey	15- 8-6	6	2,209	6	2,392
Empire	Wise	23- 8-6	1	2,685	1	2,645
Total Empire			7	4,894	7	5,037
Gypsy	Brown	33- 8-6	1	92	1	115
Gypsy	Cumsey	8- 8-6	1	487	1	0
Gypsy	Walker	15- 8-6	7	3,800	7	3,515
Gypsy	Wise	23- 8-6	2	0	2	0
Gypsy	Bowlegs	22- 8-6	1	480	1	40
Total Gypsy			12	7,086	12	3,670
Independent et al	Coker	21- 8-6	1	620	1	609
I. T. I. O.	Barnett	24- 8-6	2	1,711	2	1,888
I. T. I. O.	Billington	22- 8-6	2	1,301	2	1,388
I. T. I. O.	Bowlegs	22- 8-6	7	4,985	6	5,618
I. T. I. O.	Davis	13- 8-6	3	2,249	3	2,297
I. T. I. O.	Fay	18- 8-6	1	1,732	1	1,905
I. T. I. O.	Goforth	15- 8-6	9	4,246	9	5,429
I. T. I. O.	Livingston	15- 8-6	12	12,762	12	13,967
I. T. I. O.	Lizzie	11- 8-6	1	635	1	613
I. T. I. O.	Walker	15- 8-6	8	4,667	8	4,762
I. T. I. O.	Wilmont	15- 8-6	4	3,454	4	4,024
I. T. I. O.	Work	24- 8-6	1	952	1	1,044
I. T. I. O.	Youngblood	24- 8-6	4	1,157	4	1,205
Total I. T. I. O.			54	39,851	53	44,136
McCullough	Bowlegs	22- 8-6	2	550	2	527
Mid-Continent	Baker	10- 8-6	4	4,187	4	4,156
Mid-Continent	Bowlegs	22- 8-6	1	1,190	1	1,045
Mid-Continent	Hutke	24- 8-6	1	0	1	5
Total Mid-Continent			6	5,377	6	5,206
Minnehoma	Bowlegs	15- 8-6	4	3,584	4	3,557
Prairie	Gahagan	23- 8-6	3	1,645	2	1,380
Prairie	Harber	10- 8-6	6	5,745	6	6,580
Prairie	Templeton	12- 8-6	1	3,360	1	3,460
Prairie	Whitney	23- 8-6	4	1,390	4	1,520
Total Prairie			14	12,140	13	12,940
Pure	Reed	14- 8-6	14	13,632	14	14,404
Pure	Strother-E	16- 8-6	1	15	1	15
Pure	Strother-D	14- 8-6	1	798	1	730
Pure	Strother-F		1	460	1	375
Total Pure			17	14,905	17	15,524
Roxana	Taylor	16- 8-6	5	3,588	5	3,549
Shaffer	Lacey	14- 8-6	3	1,500	3	1,650
Sinclair	Adam	22- 8-6	1	0	1	5
Sinclair	Bowlegs	22- 8-6	1	0	1	145
Sinclair	Ellen	11- 8-6	3	1,350	2	1,635
Sinclair	Harjo	14- 8-6	3	3,075	3	3,025
Sinclair	Jones	8- 8-6	4	8,340	4	7,235
Sinclair	Taylor	10- 8-6	3	1,803	3	3,125
Sinclair	Walker	22- 8-6	4	3,050	4	3,945
Total Sinclair			19	17,618	16	19,115
Texas	Reed	14- 8-6	7	7,855	7	8,485
Tidal	Harjoche	10- 8-6	4	2,735	4	2,235
Twin State	Jones	11- 8-6	1	2,430	1	2,165
TOTAL BOWLEGS			206	162,953	201	167,086
LITTLE RIVER						
I. T. I. O.	House	1- 7-6	1	7,866	1	8,038
EARLSBORO						
Amerada	Anderson	15- 9-5	4	3,740	4	4,195
Amerada	Cowden	4- 9-5	4	5,280	4	6,620
Total Amerada			8	9,020	8	10,815
Barnsdall	Bruner	10- 9-5	1	0	1	0
Barnsdall	Brown	10- 9-5	1	3,740	1	4,445
Barnsdall	C. Cudjo	11- 9-5	1	25	1	30
Barnsdall	D. Davis	11- 9-5	2	2,037	2	2,515
Barnsdall	J. Davis	11- 9-5	2	223	2	216
Barnsdall	M. Davis	11- 9-5	3	2,288	3	2,796
Barnsdall	Gibson	9- 9-5	6	12,934	6	14,242
Bransdall	Hearn	15- 9-5	1	22	1	23
Barnsdall	Hooly	4- 9-5	1	47	1	153
Barnsdall	Sabolka	15- 9-5	1	3,000	1	3,112
Barnsdall	Sango	2- 9-5	1	148	1	145
Barnsdall	Smith	15- 9-5	1	20	1	25
Barnsdall	Pack	10- 9-5	2	797	2	1,563
Barnsdall	Peter	10- 9-5	3	601	3	1,043
Barnsdall	Sullivan	1- 9-5	4	1,930	3	239
Barnsdall	Watsutke	12- 9-5	2	2,401	2	2,040
Total Barnsdall			33	30,481	32	32,586
Carter	Payne	12- 9-5	1	1,000	1	1,260
Carter	Sango	2- 9-5	1	180	1	190
Total Carter			2	1,180	2	1,450
Continental	Spencer	12- 9-5	1	6,140	1	6,645
Crosbie	Bryant	9- 9-5	2	300	2	5,289
Empire	Edmundson	3- 9-5	1	3,612	1	3,933
Gypsy	Bruner		1	2,785	0	0
Gypsy	Carter	11- 9-5	3	352	3	427
Gypsy	Earl	16- 9-5	1	2	1	0
Gypsy	McFarland	9- 9-5	2	115	2	115
Gypsy	Noble	12- 9-5	1	2,122	1	2,550
Gypsy	Peter	10- 9-5	3	1,265	3	1,365
Gypsy	State	16- 9-5	4	1,202	4	1,217
Gypsy	Strain	17- 9-5	1	0	1	10
Total Gypsy			16	7,843	16	5,684
Independent	Bruner	10- 9-5	1	40	0	0
Independent	Gaines	11- 9-5	1	2,995	1	2,928
Independent	Knappen	8- 9-5	3	2,102	3	2,920
Independent	O'Dell	4- 9-5	4	10,660	4	7,000
Independent	Sullivan	10- 9-5	2	100	2	160
Total Independent			11	15,899	11	13,038
Interocean	Payne	12- 9-5	1	376	1	304
Magnolia	Bryant	9- 9-5	4	3,475	3	4,833
Magnolia	Edmundson	3- 9-5	2	3,707	1	1,527
Magnolia	Holmsley	11- 9-5	5	8,495	5	10,265
Magnolia	Ingram	10- 9-5	1	41	1	21
Magnolia	Lena	10- 9-5	2	169	2	278
Magnolia	Seay	12- 9-5	4	1,411	3	1,490
Magnolia	Simpson	10- 9-5	2	112	2	121
Magnolia	Sparks	11- 9-5	4	5,734	3	2,424
Total Magnolia			24	23,144	20	20,959
Mid-Continent	McCumber	9- 9-5	4	5,900	4	4,500
Mid-Kansas	Anderson	14- 9-5	1	30	1	70
Phillips	Dunnaway	15- 9-5	1	37	1	40
Phillips	Graham	9- 9-5	6	2,332	6	3,082
Total Phillips			7	2,369	7	3,122
Prairie	Baker	24- 9-5	1	50	1	50
Prairie	Davis	13- 9-5	3	3,775	3	4,025
Prairie	C. Graham	3- 9-5	1	4,380	1	4,710
Prairie	O. Graham	10- 9-5	2	1,355	2	1,960
Prairie	Stidham	11- 9-5	5	5,540	5	5,915
Total Prairie			12	15,100	12	16,660
Roxana	Hearn	13- 9-5	1	279	1	188
Roxana	Spencer	12- 9-5	2	4,984	2	5,452
Total Roxana			3	5,263	3	5,640
Skelly	Spencer	12- 9-5	1	8,738	1	8,740
Texas	Brown	10- 9-5	2	35	1	36
Texas	Rogers	5- 9-5	1	8,180	1	9,215
Texas	Wilmont	10- 9-5	1	247	1	162
Total Texas			4	8,462	3	9,413
Twin State	Baker	12- 9-5	1	3,260	1	2,953
Twin State	Hearn	2- 9-5	1	3,152	1	3,405
Total Twin State			2	6,412	2	6,358
Tidal	Watkins	9- 9-5	4	4,995	3	7,450
TOTAL EARLSBORO			142	154,999	134	162,862
TOTAL SEARIGHT			45	30,897	45	29,637
TOTAL SEMINOLE PROPER			316	79,070	313	76,256
GRAND TOTAL SEMINOLE DISTRICT			710	435,785	694	443,879
Average per well				613.8		639.6

of 10-19-1W. It is in the Wilcox at 5055-75 feet, has 300 feet of oil and 1,500 feet of water in the hole and is shut down for orders.

Operators continue to look for something in the vicinity of the old Allen pool of Pontotoc county, south of the Wewoka field. W. R. Ramsey, Oklahoma City operator, was rewarded during the past week with a 50-million foot gasser in the SEc NW SW of 17-5-8 at 2331 feet and with another in the NEc SW of 20-5-8. The latter made 25 million feet of gas and 150 barrels of oil from sand at 2446-73. Both are Wilcox wells.

Kansas continues to pursue an uneventful course, with production holding around 105,000 barrels for the entire state and little that is new showing up. In McPherson county, The Texas Co. is getting some kind of a well in territory that is new except for some small gas wells.

The test is the No. 1 Chinberg in the NWc NE NW of 32-18S-2W. Top of a pay in the Lansing lime formation was found at 2336 feet and the well was drilled to total depth of 2395 feet. Late report was that there was 2000 feet of oil in the hole, that it was bailed for about 10 hours without lowering the column and that the well had been put on the swab.

The Rooks county wildcat producer, described in NATIONAL PETROLEUM NEWS, July 20, is now pumping daylight tour and is making 50 barrels daily. This is the Vickers Petroleum Co. and A. H. Krueger's No. 1 Luh-

Completions in N. E. Central, West, Panhandle and North Texas, Week Ended August 27, 1927

NORTH AND EAST CENTRAL

Company	Well	Farm	Location Survey	Depth	Init. Prod.
Anderson County					
Humble	2	So. Pine	Morton	T.D. 5012	Dry
Humble	1	So. Pine	Chalk	T.D. 4063	Dry
Brown County					
Terrell et al	2	Swindell	SLM	1138-1154	50
Forrest	6	Smith	SA&MG	1325-1334	160
Forrest	7	Smith	SA&MG	1324-1342	1500
Roxana	3	Smith	SA&MG	1316-1342	1440
Shopp	31	Byler	T&NO	1268-1300	10
Cranfill et al	2	Short	Connell	1172-1181	7½M
Gibson	21	Shore	Ryan	T.D. 1721	Dry
Daniels et al	1	Curry	Wright	T.D. 1377	Dry
Foulcher et al	1	Thompson	GMD	T.D. 1578	Dry
Callahan County					
Valley	7	Ramsey		T.D. 800	Dry
Hill et al	1	Waller	Vigal	1667-1685	60
Adams et al	1	Moore	SP	1929-1932	20
Coleman County					
Magnolia	18	Morris	H&TC	T.D. 3745	Dry
Wise	1	Dibrell	Heagan	T.D. 2920	Dry
Loftin	1	Stephens		T.D. 1417	Dry
Wentz	2	Andrews	Bannister	T.D. 1406	Dry
Eastland County					
Gulf	1	Jones	Mathis	3352-3394	85
Texas	17	Hightower	Van Norman	1181-1202	30
Admanson et al	2	Rosenquest		1452-1462	100
Panhandle	3	Hightower	Van Norman	1172-1192	30
Ross	1	Barnett	H&TC	2979-3040	343
Hazlep	1	Reynolds	H&TC	T.D. 1207	Dry
Chestnut-Smith	2	Kemp	H&TC	T.D. 3630	Dry
Wentz	1	Studeville	H&TC	T.D. 2550	Dry
Haskell County					
Blackstone	1	Greenson	Montgomery	T.D. 2100	Dry
Jones County					
Manhattan	1	King	Bartlett	T.D. 2399	Dry
Stephens County					
Texas Consl.	9	Martin	TE&L	T.D. 3535	Dry
Mid-Kansas	4	Richardson	T&P	3718-3745	105
Throckmorton County					
Parket et al	2	Mathews	CIR	1463-1483	20
Foster	1	Graham	TE&L	T.D. 3880	Dry
Humble	1	Ellis	TE&L	T.D. 2635	Dry
Young County					
Panhandle	7	McCluskey	TE&L	4200-4202	5100
Stovall	1	Stovall	Tobin	4232-4284	OWD 900

NORTH TEXAS

Company	Well	Farm	Location Survey	Depth	Init. Prod.
Archer County					
McGregor et al	1	Farmer	Anderson	1483-1485	156
Art et al	1	Wilson	Hooris	T.D. 1550	Dry
Carter et al	3	Wilson	Hooritz	T.D. 1557	Dry
Clay County					
Hawkins et al	1	Barry	TEL	T.D. 827	Dry
Cooke County					
Fain et al	1	English		T.D. 2500	Dry
Suggett et al	1	Klement	Scott	T.D. 1812	Dry
Perkins et al	1	Stelzer	Anibal	1156-1165	1¾M
Magnolia	1	Andrews	Clarke	1156-1185	2½M
Hedrick	8	Kleiss	Littleton	1679-1707	75
Operators Trust	2	Koelzer	Scott	1627-1652	75
Roxana	4	Walterschied	Littleton	1714-1727	35
Gray et al	2	Public Park	Twinst	1607-1632	125
Oil Operators	8	Kleiss	Twinst	1622-1639	200
Cottle County					
Sun	1	Burnett	S&P	T.D. 3509	Dry
Montague County					
Pure	1	Loy	Donoho	798-814	10½M
Wichita County					
Empire	3	Kempher	WVFH	706-710	35
Wolfe et al	3	Daume	SP	1811-1818	15
Young County					
Graves	1	Watson	G&SL	589-594	4
Johnson	1	Eichelberger	TEL	T.D. 1102	Dry
Rose	1	Casey	TEL	T.D. 920	Dry

PANHANDLE

Company	Well	Farm	Location Survey	Depth	Init. Prod.
Carson County					
Skelly	7	Shaffer	I&GN	3100-3131	162
Gray County					
Southern	1	McConnell	I&GN	3268-3282	210
Hutchinson County					
Red Hill	1	Johnson	A&B	T.D. 2735	40M
Texas	2	Cockrell	M&C	2821-2886	704

WEST TEXAS

Company	Well	Farm	Location Survey	Depth	Init. Prod.
Crane County					
Simms et al	6	Univ.	Univ.	2805-2930	3385
Cromwell et al	2	Univ.	Univ.	2806-3005	1402
Cromwell et al	3	Univ.	Univ.	2785-3000	1450
Gulf	21	McElroy	CCSD	2816-2924	1422
Gulf	28	McElroy	CCSD	2773-2922	22
Landreth	11	Cowden		2825-2840	5859
Pecos County					
Marland et al	1	Yates	GC&SF	1241-1315	2730
Reeves County					
Humble	1	Kloh	T&P	T.D. 3880	Dry
Upton County					
Texas Pacific	10	Lane	GC&SF	2050-2094	150
Texas	2	Perry	GC&SF	1953-1961	1215

Completions in North Louisiana and Arkansas, Week Ended August 26, 1927

Company	Well	Location	Depth	Yield
Arkansas, Smackover				
Skelly Oil Co.	B-2 Bilyew	8-16-15	2410	80 bbls.
Arkansas, Columbia County				
Autrey Oil Company	A-2 Martin	6-14-20	1193	60 bbls.
Louisiana, Caddo				
Benedum & Trees	No. 1 Basaara	23-21-15	3660	1500 bbls. and 15 M Gas
Dixie Oil Company	B5-Files & Mabry	14-21-15	3781	625 bbls. and 10M Gas
Standard Oil Company	No. 187 Stiles	33-21-16	1870	30 bbls.
Hazlett & Simmons	No. 1 Neely	1-14-21	1715	2M Gas
Louisiana, Bossier				
Sligo Syndicate	No. 1 Jeter	23-17-12	4272	25 bbls. and 2M gas
Louisiana, La Salle, Urania				
Bruce Hunt	No. 1 Urania	7-10-2E	1525	115 bbls.
Nat. Gas & Fuel Corp.	M-10 Urania	19-10-2E	1579	80 bbls.
East Texas, Marion County				
J. D. Lynch, Trustee	No. 1 Mebane-Stiles	N. Hupton S	2375	60 bbls.
East Texas, Harrison County, Waskom				
J. R. Bahan	No. 1 J. Epps	J.Short Surv.	1,000	5M gas
C. H. Lyons et al	No. 2 Bryson	T. D. Wilson Surv.	1920	15M gas

man, in the SWc SE of 11-9S-16W. These operators have about 11,000 barrels of storage erected and will drill offset tests as required, but will confine their development activities to that effort.

During the past week the Pure Oil Co. completed a good producer in Hutchinson county. This is the No. 6 Johnson-B, in Sec. 70, Block 16, H. & T. C. Survey. Pay was found at 2870-2908 feet. After a shot of 180 quarts it made 678 barrels. Another fair well was the Minnehoma Oil Co. and Kistler's No. 4 Johnson, in Sec. 20, Block Y. M. & C. Survey. This is in Hutchinson county. Pay found at 2950-3000 feet was shot with 80 quarts and initial 24-hour production was 250 barrels.

Crude Production By Districts

(*Continued from page* 38)

	Aug. 27	Aug. 20
Big Muddy	3,050	3,000
Lost Soldier	2,750	2,600
Rock River	2,750	2,550
Lance Creek	450	600
Teapot Dome	750	1,100
Others	5,250	5,200
Total, Wyoming	51,650	54,050
Decrease		2,400
Montana		
Cat Creek	2,100	2,100
Sunburst	12,000	14,500
Others	250	250
Total, Montana	14,350	16,850
Decrease		2,500
Colorado		
Moffat (Craig)	1,650	1,700
Fort Collins	2,850	3,150
Florence	1,050	300
Others	1,600	1,700
Total, Colorado	7,150	6,850
Increase		300
New Mexico		
Table Mesa	200	300
Artesia	1,450	1,300
Hogback	350	350
Rattlesnake	300	750
Total, New Mexico	2,300	2,700
Decrease		400
Total, Rocky Mountain	75,450	80,450
Decrease		5,000
California		
Santa Fe Springs	40,500	40,500
Long Beach	91,000	91,000
Huntington Beach	69,000	68,000
Torrance	21,500	21,500
Dominguez	15,500	15,500
Rosecrans	8,000	8,000
Inglewood	34,000	34,000
Midway-Sunset	86,000	86,000
Ventura Avenue	48,400	46,600
Seal Beach	59,000	55,500
Others	155,000	155,000
Total, California	627,900	621,600
Increase		6,300
Eastern		
(Including Ill., Ind., Ky., N. Y.)	115,500	115,000
Increase		500

Completions in Oklahoma and Kansas, Week Ended August 27, 1927

OKLAHOMA

Beckham County

Company	Well No.	Location	Depth	Initial Prod.
Nelson	1	SWc NE 35-9-25	T.D. 2550	Dry

Creek County

Company	Well No.	Location	Depth	Initial Prod.
Gled	1	NEc SW NW 17-18-9 E	3160-3190	10
Foos et al	1	Lots 7 & Blk 8- 6-18-12E	2035-2078	25
Irelan	2	SWc NE SE 13-17-10 E	2447-2456	60
Atlantic	3	NWc SE NW 16-14-10 E	3224-3230	90
Sidwell	1	SEc SW NW 11-19-7 E	T.D. 3010	Dry
Greives	1	Sec 12-19-8 E	T.D. 2452	Dry
Sherry et al	1	SWc NW SE 4-18-10 E	T.D. 2745 OWD	Dry
Irelan	1	NEc 11-17-10 E	T.D. 2496	Dry
Evans	1	NEc SW 7-15-10 E	T.D. 3446	Dry
Enfisco et al	3	CSL SE NW 13-15-10 E	T.D. 3121	Dry

Grady County

Company	Well No.	Location	Depth	Initial Prod.
Carter	5	SWc SE 16-3-5 W	1780-1810 OWD	200
Carter	1	SEc NE NE 17-3-5 W	2269-2283 OWD	180
Carter	1	SWc NE SE 21-3-5 W	1524-1530 OWD	30
Nicholos	1	NWc NE NE 35-4-8 W	T.D. 3085	Dry

Hughes County

Company	Well No.	Location	Depth	Initial Prod.
McGee et al	1	NWc SE 9-8-10 E	T.D. 3220	Dry
Josey et al	1	SEc NW NE 22-9-9 E	3370-3377	25M

Kay County

Company	Well No.	Location	Depth	Initial Prod.
Comar	1	NWc SW NE 5-28-1 W	3477-3522 OWD	65

Muskogee County

Company	Well No.	Location	Depth	Initial Prod.
Gillette	1	CEL NE SE 19-16-15 E	T.D. 1389	Dry
Jolly Ogg	1	SEc NE 18-15-17 E	T.D. 2180	Dry

Okmulgee County

Company	Well No.	Location	Depth	Initial Prod.
Lambert	3	CSL SW SE NW 29-13-15 E	T.D. 870	Dry

Osage County

Company	Well No.	Location	Depth	Initial Prod.
Texas	1	SWc SE 27-27-6 E	T.D. 3430	Dry
Winoma	1	NEc 18-29-11 E	1045-1076	8
Zola	46	NWc SE NE SE 16-25-12 E	1667-1690	3
Markham et al	1	NEc SE 22-21-10 E	1562-1580	15
Devonian	1	NEc 33-21-10 E	1483-1500	100

Pawnee County

Company	Well No.	Location	Depth	Initial Prod.
Turmer	1	NEc SE 30-20-9 E	T.D. 2770	Dry

Pontotoc County

Company	Well No.	Location	Depth	Initial Prod.
Homaokla	1	NEc SE NE 17-5-8 E	2438-2456	638
Homaokla	1	SWc 16-5-8 E	T.D. 2550	Dry
Smith	1	NWc NE NW 28-3-4 E	T.D. 1004	Dry

Pottawatomie County

Company	Well No.	Location	Depth	Initial Prod.
Gypsy	2	SEc NW 4-9-5 E	T.D. 4560	Dry
Independent et al	4	NWc SW NE 4-9-5 E	4256-4295	7535
Barnsdall	6	NEc NW NE 9-9-5 E	4352-4363	4882
Mid-Continent	4	NEc NW SW 9-9-5 E	4389-4396	6370
Phillips	7	SEc NW SE 9-9-5 E	4310-4326	1661
Tidal	3	NWc 9-9-5 E	4290-4306	4515
Sinclair	1	SEc SW NE 18-9-5 E	4339-4465 OWD	32
Magnolia	1	SEc SW 13-7-4 E	3640-3650	5M
Magnolia	1	SEc NE SE 15-7-4 E	3718-3734	165

Seminole County

Company	Well No.	Location	Depth	Initial Prod.
Barnsdall	3	SWc NE SW 11-9-5 E	4266-4271	2611
Independent et al	1	SEc NE NE 11-9-5 E	4268-4280	3440
Magnolia	3	NE NW SW 12-9-5 E	4275-4291	2020
Roxana	1	NWc NE SW 15-9-5 E	3850-4323	4
Independent	1	SWc 23-9-6 E	4287-4304 OWD	200
Barnsdall	3	SEc NE NE 34-9-6 E	4110-4175	7
Slick	2	SWc NE SE 36-9-6 E	4142-4185	3461
Atlantic	1	SEc SW SE 9-8-6 E	4180-4205	3100
Tidal	4	SWc NW SW 10-8-6 E	3997-4006	480
Barnsdall	4	SEc SW SW 11-8-6	4071-4139	720
Pure	14	SEc NE SW 14-8-6 E	4379-4408	10
Pure	3	NWc NE NW 14-8-6 E	4143-4156	425
Texas	6	SEc NW NE 14-8-6 E	4281-4305	360
I. T. I. O.	12	NWc NE NW 15-8-6 E	4119-4135	165
I. T. I. O.	8	NEc SE NE 22-8-6 E	4561-4568	210
Carter	7	SEc NW NE 23-8-6 E	4281-4320	745
Empire	2	NEc SE NW 23-8-6 E	4339-4375	2242
Prairie	3	SEc NW NW 23-8-6 E	4360-4378	840
Texas	2	SWc NW NW 2-8-6 E	4294-4314	135
Barnsdall	1	SWc NW SW 3-9-5 E	T.D. 4475	Dry
Gypsy	1	NWc NE SW 3-9-5 E	T.D. 4363	Dry
Kingwood et al	5	SEc NE SE 22-9-6 E	T.D. 4860	Dry
Slick	2	NEc SW SE 35-9-6 E	T.D. 4630	Dry
Jarvis et al	1	SEc NE NE 11-9-7 E	T.D. 1600	Dry
Magnolia	1	NEc NW NE 28-9-7 E	T.D. 4405	Dry
Carter	7	SEc NW NW 14-8-6 E	T.D. 4223	Dry
Empire	9	C NW SW 14-8-6 E	T.D. 2632	Dry
Pure	10	SEc NW 14-8-6 E	T.D. 4373	Dry
Carter	2	SEc NE NE 21-8-6 E	T.D. 4315	Dry
Mid-Continent	2	SWc NE NW 24-8-6 E	T.D. 4360	Dry
I. T. I. O.	1	NEc 9-7-6 E	T.D. 4537	Dry

Stephens County

Company	Well No.	Location	Depth	Initial Prod.
Magnolia	1	SWc NE NW 1-2-5 W	T.D. 4170	Dry
Homaokla	1	NEc SE SE 17-5-8 E	2438-2456	638

Wagoner County

Company	Well No.	Location	Depth	Initial Prod.
Tillman et al	3	SWc SE SW 11-16-16 E	T.D. 812	Dry

KANSAS

Butler County

Company	Well No.	Location	Depth	Initial Prod.
Empire	1	NEc SW 34-27-5 E	2709-2725	35
Sutter et al	1	NEc NW NW 26-28-6 E	T.D. 2818	Dry

Chase County

Company	Well No.	Location	Depth	Initial Prod.
Barnsdall	2	SEc NE 25-21-9 E	T.D. 2364	Dry

Cowley County

Company	Well No.	Location	Depth	Initial Prod.
Trees	1	SEc NE NE 36-31-3 E	T.D. 3389	Dry

Doniphan County

Company	Well No.	Location	Depth	Initial Prod.
Valley	1	SEc NW 2-1-19 E	T.D. 2315	Dry

Elk County

Company	Well No.	Location	Depth	Initial Prod.
Elmwood et al	1	NWc SE NE 15-30-10 E	T.D. 2055	Dry

Greenwood County

Company	Well No.	Location	Depth	Initial Prod.
Buck et al	1	NEc SW SW 34-23-8 E	T.D. 2651	Dry
Edwards et al	1	NWc 23-24-10 E	T.D. 3050	Dry
Empire	1	NEc NW 25-22-12 E	1644-1716	360
Plains	3	NWc SW NE 11-25-8 E	2395-2435	25

Reno County

Company	Well No.	Location	Depth	Initial Prod.
Miss. Valley	1	C SE 19-22-7 W	T.D. 4001	Dry

Russell County

Company	Well No.	Location	Depth	Initial Prod.
Streeter et al	1	C NW SE 22-15-11 W	T.D. 3500	Dry

Ten Seal Beach Wells Drilled Into the Wasem Sand

LOS ANGELES, Aug. 27

DURING the past week, 10 new wells at Seal Beach, in the Alamitos Heights area, were completed for an average initial output of slightly better than 1500 barrels, all drilling down to what is known as the Wasem structure some of them taking in a large part of the Selovare sand also, as at some points there is no water sand between the two producing horizons. Of these completions, 4 were new wells and 6 were old wells drilled deeper.

At the close of this week, there were 35 wells drilling for the deeper Wasem sand, with 9 wells already cemented and drilling in. Ten additional wells are scheduled to start drilling at once for the Wasem sand. While the Wasem wells are being completed for a production average of around 1500 barrels per well in the Alamitos Heights area, the older part of the field is showing a small decline each week, as no new wells are being completed. The old end of the field is held tightly by the Associated, Standard and Marland, and these companies are in no hurry to increase their production, as the undrilled but proven area can be held as a reserve to be drilled later, when the oil is needed.

Additional deep drilling is in progress at Long Beach, with 1000-barrel wells being completed at a depth of below 5300 feet. Shell Company and Richfield are drilling a number of new wells to the greater depth, probably sufficient to hold the production of this old field to approximately its present figure for several months.

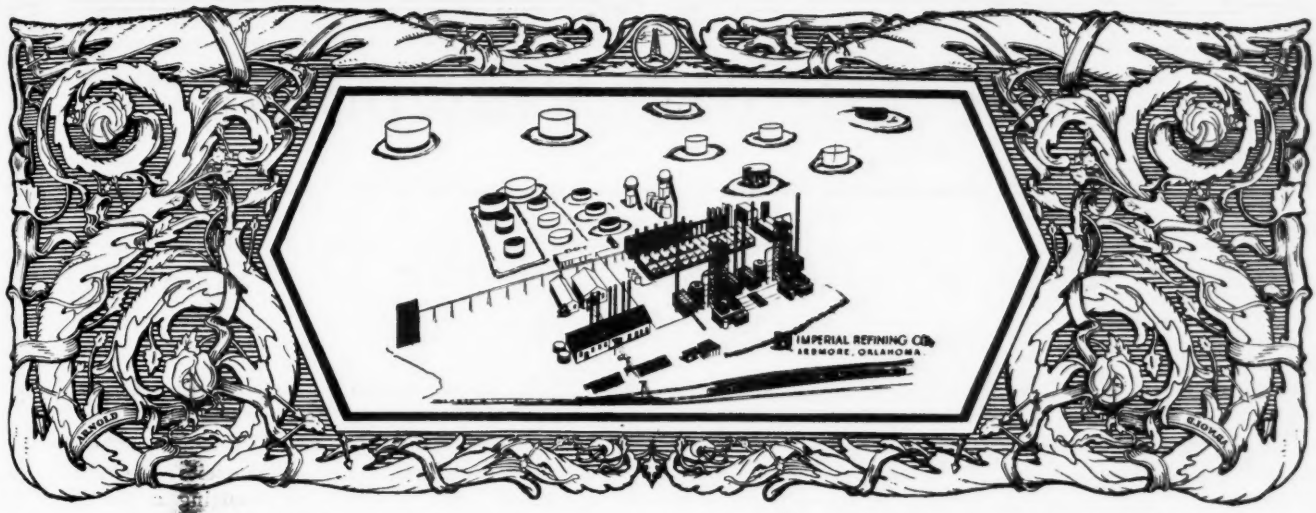
Huntington Beach is now classed as one of the older fields, since the extension began to decline. During the past week this field showed an increase in production and will hold its own for some weeks to come. The old wells are holding up surprisingly well, with a large number being produced on the gas lift.

The old Orange County pools are more than holding their own with a number of strings of tools now running. Wells are drilling quietly in this section of Los Angeles Basin, without any fuss, but the production holds up and probably will show a slight increase in the next few weeks.

There are no important developments with the wildcats which are expected to open new pools. The C.C.M.O. wells near Ventura Avenue field in Ventura County are still in trouble, with a sidetracking job at the deepest hole and a water shutoff to be perfected at the other hole. It is probable that both wells will be on production within the next 30 days. The well started by C.C.M.O. just above Pacific Ocean tidewater line is now being drilled by the Pan American, with reports late this week that a show of both oil and gas had been encountered at 460 feet.

Late Tank Wagon Change

CHICAGO, Aug. 30.—Kerosene price at Quincy, Ill., was advanced 3 cents on Aug. 27, to normal price of 11.9 cents tank wagon.



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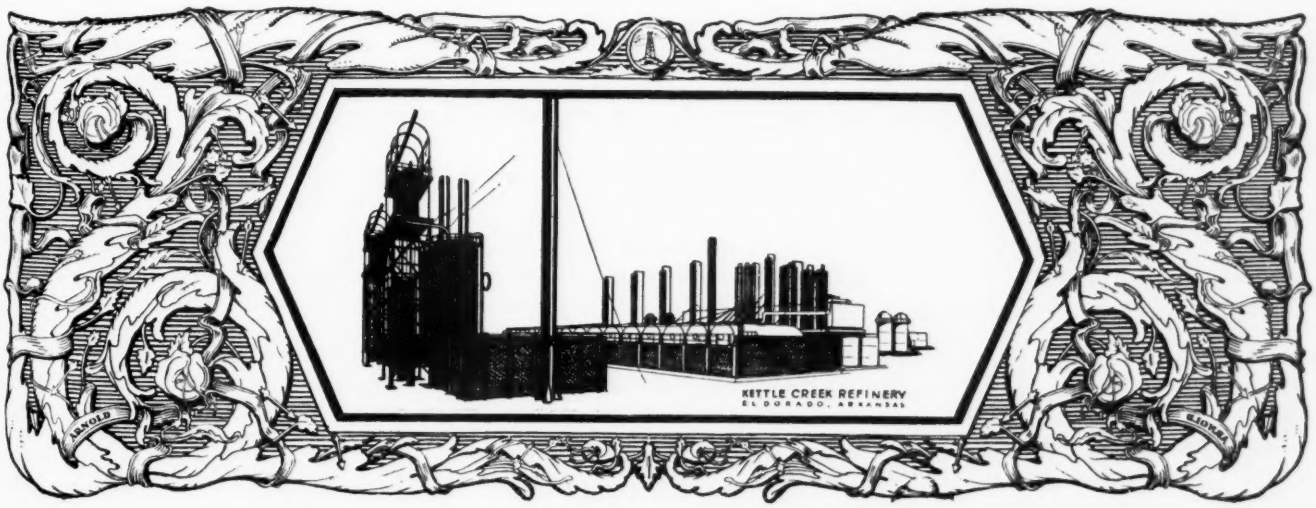
55-57 Gravity special Anti-knock cracked gasoline.
U.S. Motor specifications. 25 per cent Benzol equivalent.
Color guaranteed 21 or better at destination.
42-44 Gravity W.W. D.T. Kerosene.
Flash 130-150 Cleveland open cup.
Fire 155-175. E. P. under 600.
38-40 Gravity clean light straw furnace distillate.
Flash 150-175 Cleveland open cup.
Fire 170-195. Sulphur—less than ½ of 1 per cent.
Cold test—below zero. Odor—sweet (acid treated).
28-30 Gravity straw gas oil.
Flash 225-235 Cleveland open cup.
Fire 245-255. Sulphur under 2 per cent.
Cold test—below zero. Odor—sweet.
14-18 Gravity refinery fuel oil, under 225 visc. Furol.
18-20 Gravity Smackover crude oil.
Road Oils—Petroleum coke.

Kettle Creek Refinery - - - - - Eldorado, Arkansas



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The Editors' Viewpoint

National Petroleum News

Keep Grip of Unionism Off the Oil Industry

By Warren C. Platt, Editor

THE American Federation of Labor has announced a nation-wide campaign to unionize the oil industry, starting first with the filling station attendants and then the refinery workers.

This is something every oil man should consider most seriously.

The chances are the drive will be a failure and what will make it fail is the independence of the individual oil man and the opportunity that every job in the oil industry offers for a man going way beyond the reaches of unionism. Literally every job in the oil industry is simply a beginning.

Why unionism has never been able to fasten its hold upon the oil industry is because men are not working at jobs—they are working at opportunities to go ahead and they have gone ahead so rapidly and in such masses that unionism has had no appeal whatsoever.

Efforts have been made in the past to organize the oil industry. Back during the war there was evidence of enemy propagandists joining with some socialistically inclined people, plus a deplorably weak war labor board, combining in a campaign to organize the oil field and refinery workers. The oil men were successful in defeating these efforts. Since that time there has been a sluggish movment in the far southwest to continue the work, but without success.

The American Federation of Labor's organizers now are pointing to the recent Chicago strike of filling station employees and saying that the men won the strike in a day. As a matter of fact the men lost their fight and lost advantages. They got a slight increase in pay, but they lost other things. It was not a strike—it was a lock-out.

The "strike" never would have been considered by labor leaders had it not been tied up directly to the milkmen's and the janitors' unions, which control Chicago so far as deliveries are concerned.

Chicago, like New York and other large cities, is being more and more held under the thumb of the officers of unions. The building situation, as every one knows, is in bad shape in many cities, including Cleveland and Chicago. Costs are excessively high by reason of the union domination, and workmanship is poor.

The recent disturbance of filling station men at Chicago will undoubtedly be hailed the country over as a victory for union labor. The facts there should be explained by every oil man to every employee. Those facts are printed on page 27 of the June 29th issue of NATIONAL PETROLEUM NEWS.

Undoubtedly one of the strongest factors that the Federation of Labor is depending upon to put over its propaganda is that in the event of a strike the oil companies may be reluctant to have tank trucks of gasoline moving through the streets. While labor union officials have always publicly deprecated any violence, nevertheless, it is rather remarkable that every strike by certain types of unions has violence.

It would be a simple matter to cause trouble for the oil industry and particularly to excite the public as to the possibility of trouble by upsetting a few gasoline trucks and setting fire to them in their journeys through the city. A hue and cry would at once be raised against this fire hazard—in fact, it would probably be magnified and called an explosive hazard.

Undoubtedly, therefore, the public would take an active part in all efforts at settlement of the so-called strike, and by the public, that would mean the city council. The city council would try to settle the strike in the way which would give it the most votes, which would mean that the oil companies and then the public would have to pay the bill. A victory would be declared and then the fight would be carried on elsewhere.

If labor difficulties confront any oil company, it should at once be prepared to disillusion the public of the possibility of the town being blown up in the event that a tank truck is upset. The industry should take the position that if a truck is upset it is being done by those who want to inflame the public and do it injury—the same type of people who blow up houses that have non-union labor on them; who deface houses which have been painted by non-union painters; who break plate-glass windows which have been placed by non-union glaziers.

THE oil company confronted with union labor should meet this situation frankly and above all courageously. Take the fight right out in the open. That is one place that union labor officials dislike to be. The oil company should meet every false statement of those officials without equivocation and there will undoubtedly be lots of false statements.

The oil company should insist that its trucks will operate even if it takes the entire national guard and all the fire departments to protect it.

The chances are this drive for organizing the filling station employees in Cleveland will be a failure, primarily because some years back the unions thought they were strong enough in the delivery departments of the many industries in Cleveland to organize the milk drivers and force a much higher wage. The leading milk companies stood pat. The union struck. Attacks upon private citizens who drove in their own cars to the companies' milk depots to get milk immediately followed. It aroused the fighting ire of all Cleveland. The police department took active measures against the strikers.

The milk companies organized a big force of non-union employees and guards. Even then the attacks continued. The fight was won by the employers. The milk delivery union was broken. It cost the companies

a great deal of money, but the public of Cleveland supported the company throughout the fight and has stood by it ever since.

As a broad general proposition we have no objection to employees organizing, but we do object most seriously to the average type of official who is operating the average type of labor union today. He is not representative of the membership of that union. The controlling factors in that union are not representative of its entire membership. Labor unions are run by a small group of men who come to the meetings. The majority of the membership never attend. The result is that labor unions are mishandled and their strength abused.

Therefore, we are opposed to the type of labor union as it operates at the present time. We have had considerable experience with it, particularly in the printing business. Labor unions have not done any good for the printing business. This paper is now being printed in a non-union shop and has been for a good many years.

We learned our lesson in a most expensive strike. The present shop is absolutely non-union and the efficiency of that shop is exceedingly high and the pay of the men is much higher than any union scale. That is true of good shops all over the country. The most inefficient shops are the most highly unionized.

The fundamental wrong in present labor union management is that it undertakes to manage industry and it is not equipped to do it. In every industry where it is strong, it attacks all problems as if it was manager and owner. Labor unions are not equipped either by character of membership or plan of organization to exercise management in industry.

The group of unions that co-operate in operating the railroads—and that is exactly what they do—and which have been pointed to as the wealthiest and the most conservative and the best managed unions, it now appears, are just as devoid of managing ability as other unions. This particular railroad group invested heavily in the past dozen years in banks, buildings, real estate developments, coal mines and what not. At the last convention in Cleveland this summer it was a sad group of men who saw their castles in the air threatening to go by the board because of lack of managing ability of and within the union.

The whole conglomeration of co-operative activity is sick. The union voted heavy assessments to raise over seven and a half million dollars in an effort to save their ventures. They changed the management and method of management. The public will watch the outcome with interest.

Unions, when they get into a dominating position are no respectors of the rights of citizens under the Constitution. It has long been well known that the typographical union censors to quite an extent any adverse news or comment in newspapers and it does that regardless of the wishes of the management. The management of the papers deny it, but it is true, nevertheless.

With this threat from the American Federation of Labor, we urge every oil man to study the union problem, to study his own business and see that he meets the issue intelligently. If he wants to have his employees unionized, very well, but he should know the full effect of their being unionized—he should know the history of other businesses that have been highly unionized—he should do it with his eyes open and with the full appreciation of the consequences.

We believe that any employer who looks at all these facts will readily see that there is no place in the oil industry for unionism of the present day kind.

Most of the big oil companies have been successful in their employee relationship through company organizations. That is a sane and intelligent way to handle the problem. The employees get intelligent direct representation of their own interest. They are not tied on to the kite of some other group of employees in another company or in some other line of business. They are given full opportunity to understand the problems of management and they are in a position to give the management full information on the problems of the employee.

The relationship, which has been worked out over a period of many years in the big oil companies particularly, has been most satisfactory to all concerned. It should be continued. Its very success proves that the oil industry and all connected with it are above the level of unionism.

Doherty Again Urges Federal Regulation

BUFFALO, Aug. 30.—Henry L. Doherty, head of extensive oil and gas interests, through a brief, laid before the Minerals Section of the American Bar Assoc., meeting here today, his proposal that the federal government, under the powers of national defense, has authority to regulate oil production.

Mr. Doherty said he would like to see the Minerals Section go on record as "declaring the government has ample power to enforce the unit operation of pools and prevent waste that now is unavoidable under the state laws."

If the Minerals Section should take the position the federal government does not have this power, then Mr. Doherty said he believed it the duty of the section to bring the matter before the entire Bar Association and prepare an amendment to the federal constitution "that will permit the federal government to do anything and everything both in times of war and in times of peace, or in anticipation of war, necessary for our national safety."

R. L. Welch Will Speak To Four-State Jobbers

WICHITA, Kan., Aug. 29.—Most of the speakers for the Big Four State Jobbers convention, which will he held on Oct. 4, 5 and 6 at the Kansas City Athletic Club, Kansas City, have been chosen, and among them are:

H. M. Ewing, Petroleum Insurance Co., Philadelphia; C. O. Hoover, research engineer, Deepwater Refineries, Inc., Houston; C. W. Gilles, Shelby Sales Book Co.; George D. Tubbs, Foster Lumber Co., Kansas City, Mo.; and Robert L. Welch, secretary and counsel, American Petroleum Institute.

Souvenirs will be presented to the first 500 who register for exhibit space at the convention, according to the Aug. 27 Kansas Oil Men's Association Bulletin.

The Oil Men's Club of Kansas City has arranged for a special vaudeville performance for the evening of the second day.

Oil Writer Stricken

HOUSTON, Aug. 28.—P. L. McGreal, 60, Gulf Coastal correspondent of the Oil City Derrick and the Oil & Gas Journal, died of apoplexy, Aug. 27, while being transferred to a hospital in an ambulance. He was stricken in the lobby of the Cotton hotel a few minutes earlier. Mrs. McGreal was in Detroit visiting relatives. McGreal, who was born in Oil City, Pa., began his career as a telegraph operator. He had lived at Houston about 15 years.

Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

Explaining It To the Motorist

THE August issue of the Union Oil Bulletin carries an article by C. C. Moore Jr. and M. S. Reynolds in which an imaginary visitor who may be called Mr. Average Motorist is taken through the dynamometer laboratory at the company's Wilmington, Cal., refinery, where testing of fuels is carried on, and the meaning of "high compression," "anti-knock fuels" and such modern expressions are simply explained to him.

Sales Engineer Makes Rapid Trip

W. R. WALTON, sales manager refinery division of the associated H. E. Widdell Engineering Co. and Arthur G. McKee Co. of Cleveland, has been traveling a lot recently. His trip included visits to New York, Philadelphia and Pittsburgh. These he made by train. He had an appointment in Bradford, Pa., one day and found it impossible to make it in time by train. He drove from Cleveland to Bradford, 216 miles, stopping for awhile at Warren on another business errand, spent several hours with his client, and then drove back to Cleveland by another route, which proved to be 237 miles long.

Sulphur in Motor Fuels To Be Studied

A VERY interesting program has been arranged for the joint meeting of the Petroleum Division with the Industrial and Engineering Chemistry Division of the American Chemical Society, during the general meeting of the society to be held in Detroit beginning Dec. 5.

Sulfur is to be the topic discussed in three of the papers on the program. These are "Sulfur in Gasoline from the Automobile Standpoint," by H. C. Mougey, General Motors Research Corp. engineer; "A Study of the Effects of Sulfur in Gasoline on Wrist-Pin Corrosion in Automobiles," by S. H. Diggs, Standard of Indiana; and "Thermal Decomposition of Sulfur Derivatives of Hydrocarbons," by W. F. Faragher, J. C. Morrell and F. Comay of the Universal Oil Products Co. These papers will undoubtedly throw considerable light on the much debated question as to how high a percentage of sulfur it is safe for gasoline to carry.

Other papers to be presented at the meeting include, "Heat Transfer for Oils and Water in Pipes," by F. H. Morris and W. G. Whitman; "Effect of Knock Suppression and Knock-Inducing Substances on the Combustion of Certain Pure Fuels," by R. E. Schaad and C. E. Boord; "The Anti-Knock Properties of Cracked and Straight-Run Gasoline from Various Crude Oils," by W. F. Faragher, Gustav Egloff and J. C. Morrell; "The Determination of the Volatility of Gasoline," by R. Stevenson and J. A. Babor; "Apparatus for Fractional Distillation Under Reduced Pressure," by J. C. Morrell and Gustav Egloff; "Relation Between Viscosity and Gravity of Petroleum Products," by J. B. Hill and H. B. Coats; "An Improved Apparatus for Determining the Flow Points of Lubricating Oils," by F. S. Bacon; "Evaluation of Transformer Oils," by J. G. Ford; "The Free Energy of Some Hydrocarbons," by A. W. Francis; "The Free Energy of Some Alcohols," by A. W. Francis; "Unsaturated and Molecular Weights of Commercial Lubricating Oils. Modification of Francis Method of Determination of Unsaturateds in Oils," by F. S. Bacon; "An Economical Plan for Recovering Valuable Products from Spent Doctor and Caustic Solutions," by F. J. Mechlin; "A Precision Pipet Viscosimeter," by S. W. Ferris, and "A Study of an Intermediate Base Crude," by H. M. Smith.

E. M. Clark President of New Company

EDGAR M. CLARK, one of the veteran refining executives of the Standard Oil Co. of New Jersey, has been elected president of a new company, the Standard Shipping Co. of Delaware, which has been organized to take over the operation of all the marine units owned by the Standard of New Jersey. The ships were formerly operated by the marine division of the Standard of New Jersey.

Mr. Clark, who was an associate of Dr. Burton in the development of the Burton cracking process, left the Standard of Indiana to join the Standard of New Jersey several years ago since which time he has been vice president in charge of manufacturing and a director. He recently returned from an extended trip in Europe during which he visited most of the oil producing and oil refining countries.

Skelly Brings Out Special Airplane Fuel

WITH interest in flying at high pitch and the airplane factories swamped with orders, the oil industry is turning its attention to the problem of furnishing the special fuel that will be needed for the coming fleets of planes, with the same energy that it devoted to the problem of furnishing gasoline for automobiles when these began to be an important factor in American life.

Skelly Oil Co. is one company that is now putting out a fuel especially for use in airplanes. The fuel is strictly a product of natural gasoline, according to the August issue of Skelly News. The first tank car of it left the Slick., Okla., natural gasoline plant of the company for San Francisco July 27, to be used in fueling at least one of the planes in the race from California to Honolulu.

According to Skelly News, the new fuel is made in two grades, weighing respectively 5.5 and 5.59 pounds per gallon, as compared with from 6.12 to 6.4 pounds to the gallon for ordinary gasoline. It is said to be capable of producing more mileage per pound as well as greater weight lifting capacity because it permits higher engine speeds.

Legislative Control of the Business Of Producing Oil and Gas

By James A. Veasey

General Counsel, Carter Oil Co., Tulsa

Read before Mineral Law Section, American Bar Association, at Buffalo, N. Y., Aug. 30.

PART I

COLOSSAL in its capital investment, and in the extent of its world-wide business, supplying commodities probably more essential to the wellbeing and prosperity of the people of the United States than any other, save the products of agriculture, marvelous in the ingenuity, energy, and financial daring which has made it possible for it to meet the constantly increasing demand for its products, at prices always relatively lower than those characterizing any other staple, the American Petroleum industry at last is setting itself to the all important task of solving a problem which at rather frequent intervals has harassed it from the beginning, the problem of the overproduction of its raw material, crude oil.

The movement had its inception in the efforts of a few stalwart, forward looking crusaders within the industry itself who later found the ready support and co-operation of the Federal Oil Conservation Board, appointed by the President in December, 1924, and it is now receiving the earnest and thorough-going attention of the industry's national organization, the American Petroleum Institute.

Our more advanced economists no longer hold the view that overproduction in the broader aspect of that term has a compensating result. They apply this reasoning with special force to all enterprises which engage in large scale production, and where the balancing of supply and demand is not only a difficult and long drawn-out process but one attended by serious financial loss either to the industry concerned or to the consuming public. Orderly production upon the basis of a stabilized price, fair alike to the purchaser and the consumer, is the modern economic ideal. This is the principle for which the farmer, the bituminous coal miner, the textile industries, and other enterprises, plagued by overproduction and its attendant evils, are now so vigorously contending.

Overproduction in the basic industries just referred to is serious enough, but a similar condition in the oil business results in consequences which do not visit any other pursuit. First and foremost, is the utter inability of the oil producer acting individually, to reduce his production for the purpose of equalizing the supply with a diminished or diminishing demand. In like circumstances, the miner of solid minerals, the lumberman, or manufacturer may shut down his plant or reduce his output. The sole loss to him is that normally incident to a stoppage or reduction of production. On the other hand, the oil producer does not have freedom of action in this regard.

Oil is a vagrant mineral and is the property of the one who, on his own land, reduces it to possession. Where several tracts of land are underlaid by a common oil reservoir, which is almost universally the case, the extent and celerity of the operations of one producer must be determined by the acts of his neighbors. All of them but one may wish to refrain from drilling new wells, or reduce the production of existing wells during a period of overproduction; but if this one is of a contrary mind, he may force all of the producers in the pool to engage in an intensive drilling campaign or to operate their properties to capacity.

The history of the oil business abounds in countless situations of this sort, and thus if overproduction exists the condition persistently is aggravated instead of relieved by these practices. Hence, the matter comes to this: Units of all other industries by taking individual action may eventually restore the equilibrium between supply and demand. No such course is open to the oil industry. All the operators interested in a particular pool must voluntarily combine to achieve the result, or there must be coercive legislation appropriately adapted to the accomplishment of that object.

The second distinction between the petroleum industry and all other industries resulting from overproduction is the extreme and radical readjustment to which the oil business must submit during periods of oversupply. The reduction or expansion of the margin between supply and demand in all industries, save petroleum, is brought about more or less gradually. An opportunity for orderly stabilization is thus afforded. This process is impossible in relation to the oil business. Future discoveries cannot be anticipated with any degree of certainty, nor can the holding qualities of existing flush production safely be approximated. Hence, the transition from an undersupply to an oversupply or the reverse is necessarily abrupt. Frequently, the consequences of a situation of this sort are nothing short of disastrous, as the experience of the industry at the moment so completely demonstrates.

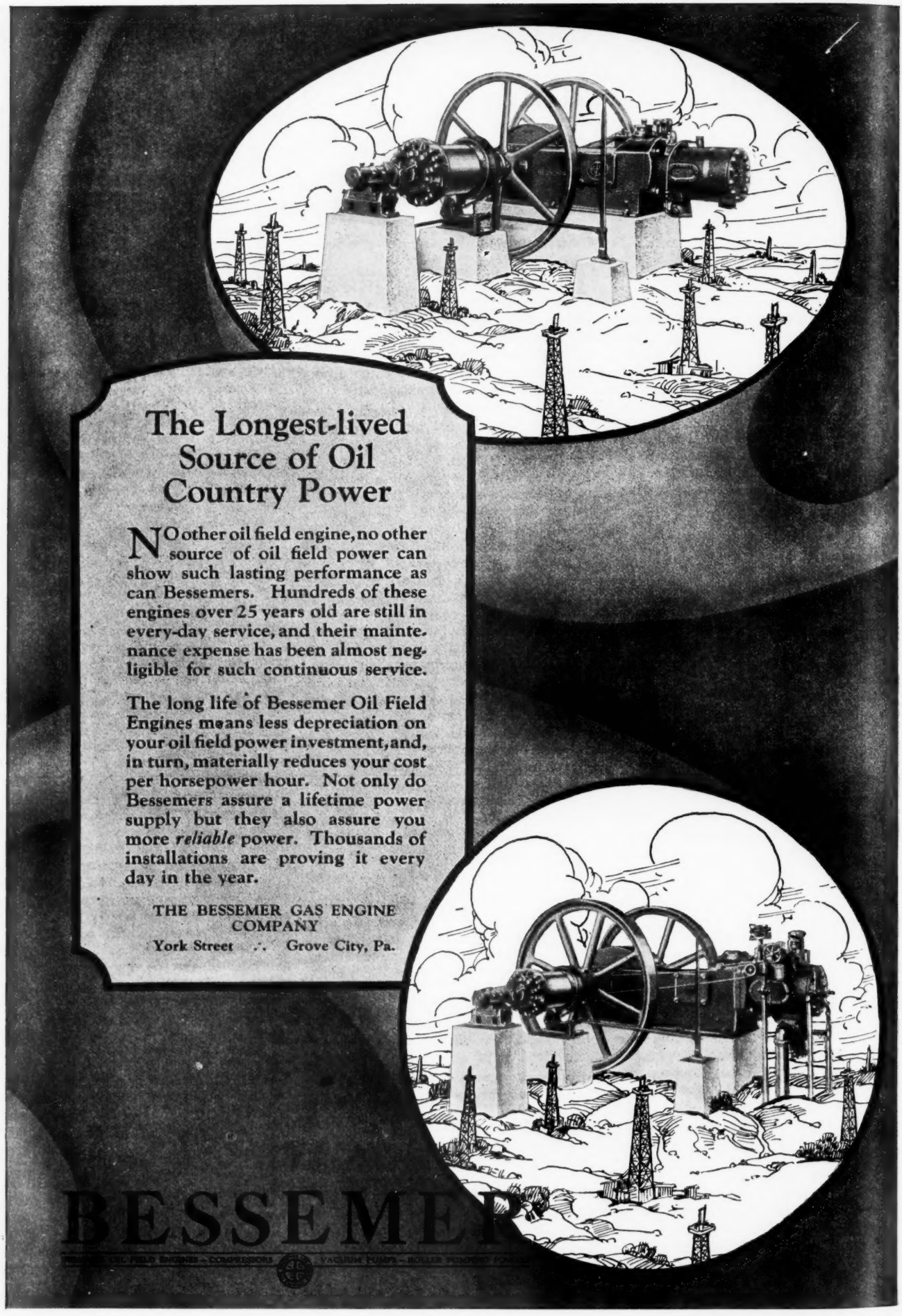
THE oil industry entered upon an unusually severe period of overproduction about November, 1926. With production mounting constantly between that date and June 1, 1927, the price of crude oil in the Mid-Continent field and in the Rocky Mountain regions was cut nearly one-half in this interval. During the same period, the price of California crude was reduced more than one-third. The loss resulting to producers from this difference in price ran into hundreds of millions of dollars. But this was not all: In the older fields where the output was not flush, the price of

TO AN extent not previously attempted, Mr. Veasey set himself to the task of codifying the conservation laws that have been enacted by the several oil producing states. With these he has searched for the court decisions which gave them application to the oil and gas industry.

This illuminating discussion was prepared for presentation to the Mineral Law Section of the American Bar Association, in Buffalo, Aug. 30. It comes at an appropriate moment in the industry's history. To a greater extent than ever before the question of conservation of oil and of gas as a factor in the production of oil has been discussed and debated.

Mr. Veasey has drawn the picture as it exists today, with the limitations and powers of state and federal government outlined through the media of court action. He presents no plan for action but brings to attention in comprehensive manner the legal phases that must be taken into account in the consideration of any plan.

This document is not alone for the lawyers. It is worthy of the study of all oil men, for they presently will have to take some position on the question of conservation, not generally, but specifically, if they are to have a part in shaping the future course of the industry.—L. E. S.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crude actually had fallen below the cost of production where the capital investment of the small operators was taken into account.

In the nature of things, these radical and abrupt price cuts in relation to the industry's raw material immediately reacted upon the price of refinery products, and a condition approaching almost complete demoralization ensued. A careful observer, writing in one of the leading oil journals, estimates that as a result of the situation the refineries of the country were sustaining a loss of gross revenue of $1,645,000 daily from gasoline sales alone.

Another inevitable incident of the depression was the decline in the market value of oil securities held by hundreds of thousands of investors, large and small, in every section of the country. By May 21, 1927, in comparison with stock market quotations having the highest range for 1926, the shares of 30 of the larger petroleum companies experienced a price decline of nearly $600,000,000, and the depreciation of all oil shares during the same period approximated $1,000,000,000.

Despite the unfortunate predicament of the bituminous coal business and other basic industries which are undergoing economic readjustment, no parallel can be found for the extraordinary losses which, under existing conditions, the oil industry must sustain during periods of overproduction.

THE considerations noted should demonstrate that overproduction is a far greater menace to the petroleum industry than to any other: First, because there is no adaptable method available to the industry to restore the balance between supply and demand as is true in the case of all other industrial enterprises. Secondly, an aggravated condition of overproduction in the oil industry subjects the business to an extremely burdensome program of readjustment, and to infinitely greater financial loss than is incident in a similar state of affairs to any other industry. Thus hampered, the ability of the industry to meet its full economic responsibility is decidedly impaired, and on these grounds alone the solicitude of the public should be enlisted.

But constantly recurring periods of overproduction of petroleum bring into view what is now a commonly recognized necessity, the conservation of our petroleum resources, not only for the benefit of the consuming public but in the interest of the national security as well. To demonstrate this point, deductions from the unusually able report of the Federal Oil Conservation Board should be resorted to. The basic conclusions of the board are these:

1.—That in the nature of things petroleum is a wasting asset.

2.—That more than one-half of the country's total petroleum supply comes from 4 per cent of the producing wells, namely, flush wells.

JAMES A. VEASEY

3.—That flush production comes from new discoveries, and that the maintenance of an adequate supply of crude petroleum to meet the needs of the country depends upon the constant discovery of new fields or the finding of production in deeper formations in old fields, both of these eventualities being purely fortuitous.

4.—That our general industrial and commercial prosperity and the very security of our government depends upon the ability of the American petroleum industry at all times to maintain an adequate supply of crude oil.

5.—That during periods of overproduction oil products are driven into inferior uses which is not true conservation.

6.—That the basic cause of overproduction is the competitive system of drilling imposed upon oil operators by existing laws and the long established practices and customs of the business.

7.—That competitive drilling not only results in overproduction, thereby driving oil products into inferior uses but that the competitive drilling practice results in the dissipation of the gas pressure in oil pools and a consequent reduction in the quantity of oil that ultimately will be recovered.

8.—That conservation of our oil supply will be promoted by a restraint on competitive drilling and by conserving the gas pressure in oil pools.

The Scope of This Inquiry

FROM a legal viewpoint, the report of the Federal Oil Conservation Board suggests two important reforms in the conduct of the business of producing oil; namely, a restraint upon, or a modification of, the system of competitive drilling; and the retention of gas presure in oil producing formations, to the end that the ultimate oil recovery may be enlarged.

The pertinent thing is how these reforms may be brought about. Broadly speaking, there are at least three schools of thought in the industry in this regard:

First, the ultra-conservatives who contend that the business of producing oil is so highly individualistic that each operator should be left free to pursue his own methods in the development of his property, independent of co-operation with his neighbors in the same pool, and completely immune from legislative control.

Secondly, those holding that the practical and desirable solution of the problems of the industry involving overproduction lies in an intelligent and, to a certain extent, unselfish, voluntary co-operation among producers in each pool to accomplish the objects recommended by the federal oil board.

The third class embraces those who believe that co-operation among operators is either wholly impossible of achievement, thus necessitating legislative control, or that co-operative effort, to the extent that it can be brought about, should be supplemented by coercive legislation, preserving gas pressure and perhaps inhibiting competitive drilling.

At the moment, no one can predict which of these opinions will prevail. Eventually, however, the petroleum industry may be called upon to determine whether or not the business of producing oil should be regulated by statutory law. Should the conclusion be in the affirmative, the question which will then arise is the degree in which the federal or state governments may regulate the production of oil.

If the industry is to be forehanded, members of our profession specializing in the law of oil and gas should give this subject their studious attention at once. The sole purpose of this address is to arouse interest in that direction.

Under-Ground Characteristics of Petroleum

AS THIS paper proceeds, the supreme importance of the question suggested above will develop. Generally speaking, petroleum lands are held in small tracts, several, or a number, of tracts being underlaid by a common reservoir. In these circumstances, oil and gas being fluid minerals, correlative rights and obligations between and among the operators interested in the particular pool are established, because the methods employed by one operator in the development of his land injuriously may affect other oil properties in the same pool. To this situation,

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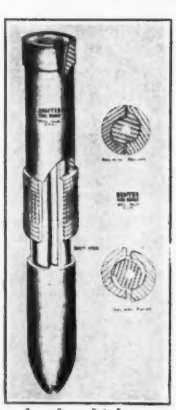

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nearly all the problems of the petroleum industry pertinent to this discussion must be ascribed.

The power of Congress to regulate the drilling and operation of oil wells on land held in private ownership in the several states will be emphatically negatived, but the same inquiry into the power of a state presents many serious and difficult questions, the solution of which depends largely, if not entirely, upon an accurate understanding of the physical nature of petroleum in place. At the outset, therefore, this matter should receive our attention.

The courts take judicial notice of the propensities of oil and gas under ground, and, unfortunately, they habitually exaggerate the tendency of petroleum, in particular, to wander from one tract of land to another.[1] In point of fact, the drainage area of an oil well is comparatively small. Therefore, ignoring for the time being the effect of gas pressure and volume which will be dealt with later, a well drilled on one tract of land, even though near the boundary of another results in but little actual drainage of the adjacent premises.

The notion that petroleum, as such, —again putting aside the matter of gas pressure,—possesses a marked tendency to migrate from one tract of land into a well located on another, is rather definitely refuted by the fact that even under the most approved methods in use at this time the percentage of recovery of an oil deposit ranges from 10 to 25 per cent only of the original oil content, the percentage of recovery depending upon the extent of the gas pressure and volume porosity of the producing formation, and certain other factors which either accelerate or retard actual production. From this it follows that from 75 to 90 per cent of the oil occupying the reservoir remains in place in its original habitat.

When this fact is supplemented with the further consideration, that most of the production of a particu-

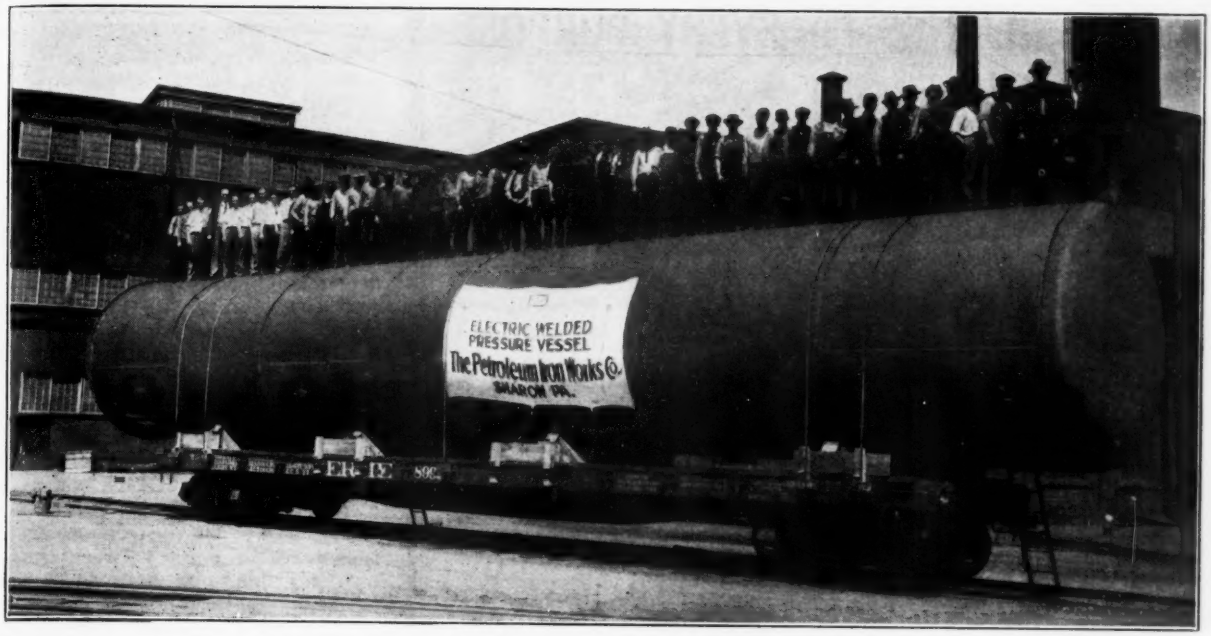
1. In the most celebrated oil case ever decided, and which has been followed in many jurisdictions, Ohio Oil Co. v. Indiana, 177 U. S. 190 (1900), an oil and gas pool, in effect, is likened to a body of surface water extending over the lands of several proprietors, it being held that one proprietor cannot take without diminishing the quantity otherwise available to the other proprietors. In the same case, it is said that, "oil and gas have the power of self-transmission."

In Kelly v. Ohio Oil Co. 49 NE 399 (Ohio, 1897) it is said, "They move from one tract of land to another by percolation."

In Logan Natural Gas Co. v. Great Southern Co., 126 Fed. 623 (1903) the court observed, "petroleum and natural gas *shift* in locality and are inclined to run from place to place."

In Frost Johnson Lumber Co. v. Heirs of Salling, 91 So. 207 (La. 1922) the court speaks of "oil and gas running *at large* beneath the surface of the earth."

In Texas Pacific Coal & Oil Co. v. Commanche Duke 274 SW 193 (1925) one of the Texas Courts of Civil Appeals used the following language: "The doctrine is now well established that petroleum in its normal state is of a fugacious nature, *restlessly and ceaselessly moving* about in the bowels of the earth in response to natural forces and influences which have never been fathomed or mastered by human science."



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lar well, even though it be a line well, comes from the tract on which the well is located, the specific danger of drainage from one tract of land to another does not reach the importance attributed to it by the courts.

Putting aside the matter of water intrusion, and other acts of an oil operator in the development of his property, which may injure the producing formation to the detriment of all operators interested therein, the determination of the questions to be considered here will largely depend upon the function of natural gas as the agent for producing oil rather than upon the possibility of drainage of one property by operations of another.

Oil is found in sand or sandstone beds under layers of rock which make a gas-tight dome or cover for the oil reserve. The petroleum occupies the spaces or pores between the sand particles, and its natural tendency is to adhere to the sand rather than to migrate therefrom. Forces more or less extraneous in character are necessary to bring about commercial production. A number of factors which may or may not be present in the particular pool either accelerate or retard the production of oil. It will be necessary to refer to but three of these to establish the point of view from which the power of the national or state governments to regulate the drilling and operation of oil wells must be determined:

NEARLY every formation, saturated with oil, is characterized by a salt water deposit, encountered in the bottom of the sand or on the flanks of the structure, or both, and, hence, hydrostatic pressure is one of the propulsive forces controlling the production of oil. Frequently, a deposit of natural gas, entirely separated from the oil, will reside in the upper reaches of the producing formation, and here, again, we have propulsive influence which is a contributing factor to the production of oil; but these forces are merely supplemental aids to the production of oil rather than primary in their importance.

The all-important agent incident to oil production remains to be considered: Crude oil under ground, generally speaking, is heavily charged at high pressure with natural gas. This means that the oil contains large quantities of dissolved gas. This commingling of oil and gas not only increases the fluidity of the oil but overcomes other forces, the tendency of which is to cause petroleum to adhere to the sand. Therefore, for the purpose of this discussion, the principle must be accepted that the gas dissolved in oil is the major factor in producing oil commercially. It not only carries and propels the oil into the opening in the sand made by the well but it is the most important

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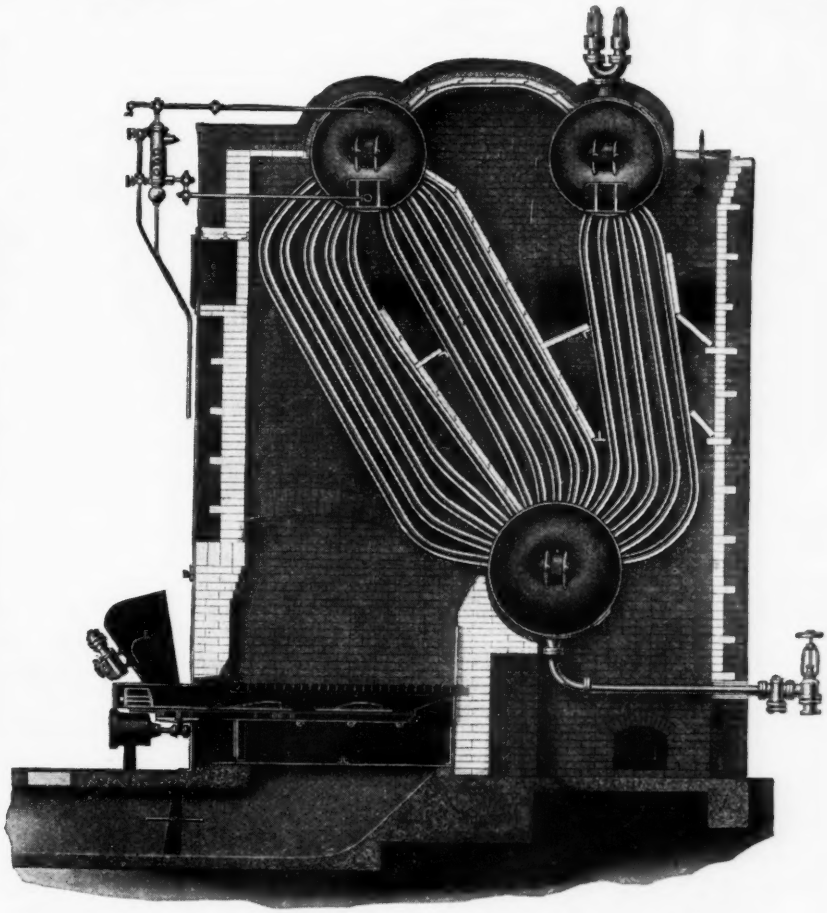

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instrument in lifting the oil to the surface.

Finally, then, as the subject is now viewed, the dissipation of gas pressure and volume, and the resulting inability of operators having access to the particular deposit to recover the quantity of oil they otherwise would obtain, will furnish a standard for determining the extent of the legislative power to control the drilling and operation of oil wells.

Federal Power

MAY Congress regulate the drilling and operation of oil wells on lands held in private ownership in the several states? In the broader view, the question presents a twofold aspect:

First, the determination of some express or implied power in Congress to so legislate.

Secondly, if such power exists, is its exercise in the situation presented here restrained by the fifth amendment to the federal constitution?

Since we intend to enter an emphatic negative to the first proposition, the second will not be considered. Moreover, whatever merit there may be in the point, that an act of Congress designed to control the drilling and operation of oil wells would offend the due process clause of the fifth amendment, will develop from the discussion of the fourteenth amendment in relation to state legislation.

In our view, the primary question of power in Congress must be tested by the following considerations: First, by the concept of inherent power in the general government, arising from sovereignty alone; second, the general welfare clause in section eight of article one of the federal constitution; third, the commerce clause; fourth, the reserve powers of the states.

The proposition, that our federal government is one of enumerated powers, is so elementary that the discussion of the first question should end with its mere assertion were it not that on two occasions, at least, it has been urged before the courts that the federal government possesses inherent power by virtue of its sovereignty.

In Kansas v. Colorado,[2] wherein the state of Kansas, in an original proceeding in the Supreme Court of the United States, sought to enjoin the diversion of the water of the Arkansas river by the State of Colorado, where the latter state was appropriating the water for the reclamation of arid lands, the United States government sought to intervene. It was conceded by the government that the Arkansas river was not navigable in the region affected, and, accordingly, that the United States had no power to act under the commerce clause. It was further conceded that there was no specific, express, or implied power in the federal constitution which could be referred to as basis for intervention. Counsel for the government predicated their case on two propositions:

First, that the subject matter could be dealt with effectively by the general government, while it could not be so dealt with by the states.

Second, upon this foundation, it was argued that the necessary power resulted to the United States as an attribute of its sovereignty, that is, its power to govern for the general welfare.

Mr. Justice Brewer, in an illuminating opinion, after restating the doctrine that the national government was one of enumerated powers, indulged in a striking interpretation of the tenth amendment. He said:

> "Its principal purpose was not the distribution of power between the United States and the States but a reservation to the *people* of all powers not granted ********* The powers affecting the internal affairs of the states, not granted to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states respectively, and all powers of a *national character*, which are not delegated to the national government by the Constitution, are reserved to the *people* of the United States."

Farther along in his opinion, he adverts to the familiar principle, that the powers of the central government can be enlarged by amendment of the federal constitution, and in no other way. Here, we have an epitome of our whole constitutional system: Delegated power in the federal government over matters of national concern; reserved powers in the states over matters of local concern, not specifically prohibited in the federal constitution, the people reserving all powers over matters of national importance which are not expressly delegated to the general government or implied therefrom, and, finally, a method of enlarging the powers of the federal government by amendment.

This reasoning completely demolishes the novelty of inherent power in the federal government, from which it follows that on this foundation, at least, Congress may not regulate the drilling and operation of oil wells on lands held in private ownership in the several states.

It is equally clear that the common defense and the general welfare provision of the first clause of section VIII, article I of the federal con-

2. 206 U. S. 46, (1907): U. S. v. Shauver, 214 Fed. 155 (1914) involved the constitutionality of the migratory bird provision of the Act of March 4, 1913, whereby the United States sought to regulate the capture and seizure of migratory birds throughout the United States. Here, it was claimed that it was impossible for any State to enact laws for the protection of migratory wild game; that only the national government could do it with any fair degree of success. Consequently, the power must be national, as an implied attribute of sovereignty. Under the authority of Kansas v. Colorado, *supra*, the act was held unconstitutional.

stitution cannot be invoked to uphold the power of Congress in this regard. This clause is a limitation upon the taxing power of the national government, and does not vest in Congress any general power to legislate for the common defense or general welfare.[3] This brings into view the third proposition, namely, the power of Congress to regulate the drilling and operation of oil wells by virtue of the commerce clause. The production of oil, even though the oil is intended for shipment in interstate commerce, is a matter of local and not national regulation.[4]

Whatever doubt there may have been about the power of Congress to regulate matters local to the states, such as mining, manufacturing, or other production, though the indirect route of the commerce clause is set at rest by the two child labor decisions.[5] No stronger state of facts could be presented for the extension of the commerce clause so as to include production and manufacturing within the states, and to impinge upon the reserve powers of the states under the tenth amendment than the one appearing in these cases.

From the viewpoint of the general welfare of the American people, and even from the standpoint of the national defense, in the direction of preserving the man power of the nation, a prohibition upon child labor would seem to be justified. If the question of federal power in this respect were even a close or doubtful one, the language of the Court in the Hammer case is absolutely conclusive:

> "The grant of power to Congress over the subject of interstate commerce, was to enable it to regulate such commerce and not to *give it authority to control the states in their exercise of the police power over local trade and manufacturing.* ******* The grant of authority over purely federal matter *was not intended to destroy the local power always existing and carefully reserved to the states in the tenth amendment to the Constitution.* ******* Police regulations relating to the internal trade and affairs of the states have been uniformly recognized as within such control ******* There should be limitations upon the right to employ children in mines and factories in the interest of their own and public welfare all will admit******. It may be desirable that such laws be uniform, but our federal government is one of the enumerated powers and the *maintenance of the authority of the states over matters purely local is as essential to the preservation of our institutions as is the conservation of the supremacy of the federal government,* in all matters intrusted to the nation by the federal constitution. ****** The power of the states to regulate their purely internal affairs by such laws as seem wise to the local authority, is inherent and has never been surrendered to the general government."*********
>
> "******** Thus the act, in a twofold sense, is repugnant to the Constitution. It not only transcends the authority delegated to Congress over commerce, but also exerts a power as to purely local matters to which the federal authority does not extend."

If there is any certainty in the constitutional law of this country, this holding conclusively disposes of the pretense that the Congress of the United States may regulate the drilling and operation of oil wells on lands held in private ownership within the states. The only provision in the constitution which would sustain such authority would be the commerce clause, and it is here laid down that this clause does not include that power. On the contrary, it is specifically held that these are matters of local concern, and, therefore, subject to state rather than to federal regulation. It is needless to enter upon a discussion of the fourth proposition relating to the reserve powers of the states. That question also, specifically, is settled by the child labor cases.

State Power

IF, THEN, the power to regulate the business of producing oil resides in the states and not in the national government, by reason of its purely local aspect and significance, and if eventually it shall be the will of the industry to invoke statutory regulations in the direction of conservation, and to prevent the extreme and uneconomic fluctuations in the supply of its raw material which have ever characterized the business, the inquiry which logically follows involves the scope of state power in this respect. What measure or measures would be within the police power of the states? And at what point in this connection would the police power have to yield to the private property guaranties of the fourteenth amendment to the federal constitution and of the constitutions of the states? Numerous conservation statutes have been adopted by the oil producing states. Most of these cover the simpler phases of conservation. On the other hand, some of the more recent enactments are far-reaching in their application.

Keeping in mind, however, that the two points emphasized throughout this paper are over-production, and the conservation of petroleum in its broadest aspect, it may well be doubted if there is any statute in existence adequately designed to accomplish these two purposes. Therefore, if legislation is the remedy, we must look to the future for appropriate enactments rather than depend upon statutes already in force. Neverthe-

3. Story's Constitution, Section 907-8, U. S. v. Boyer, 85 Fed. 425 (1898). In this case, it is said: "No case has been cited tracing the power (of Congress) to enact any statute to the general welfare clause quoted above, and I do not believe any can be.

4. Heisler v. Thomas Colliery Co., 260 U. S. 245 (1922);
Oliver Iron Mining Co. v. Lord, 262 U. S. 172 (1923);
U. S. Mine Workers of America v. Coronado Coal Co., 259 U. S. 344 (1922);
Capital City Dairy Co. v. Ohio, 183 U. S. 238 (1902); Crescent Oil Co. v. Mississippi, 257 U. S. 129 (1921);
Ohio Oil Co. v. Ind., 177 U. S. 190.
In Heisler v. Thomas Colliery Co., *supra* McKenna, in effect, states that a contrary rule would nationalize and withdraw from state jurisdiction and deliver to federal commercial control the products of all of the states.

5. Hammer v. Dagenhart, 247 U. S. 251 (1918), Child Labor Tax Case, 259 U. S. 20 (1922).

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less, a survey of conservation measures adopted in the past will establish the point of view from which possible future legislation, relating to this subject, should be considered. To this task, we now assign ourselves:

(A)

THE simplest and yet one of the most important conservation statutes is the one designed to protect oil and gas strata from fresh and salt water intrusion. It is interesting to observe that the oil business was twenty years old before the Pennsylvania legislature, in 1878, was aroused to the necessity of preventing the intrusion of water into the producing formations. Experience then was so limited that fresh water and oil sands alone were dealt with. No provision was made for the protection of gas-bearing sands, nor to prevent the infiltration of salt water.[6]

In 1879, the New York Legislature enacted a conservation statute identical with the one adopted in Pennsylvania.[7] These two statutes covered abandoned wells only. Operators, upon abandoning their wells, were required to plug them to prevent fresh water from penetrating the oil-bearing rock.

Ohio enacted its first conservation law in 1883. Its operation was limited to the exclusion of fresh water from the oil sands, and no provision was made for the protection of gas-bearing sands, but a new element was introduced: Operators, before drilling into the oil-bearing sands, were required to case their wells so as to prevent fresh water from penetrating the oil sand.[8]

Although West Virginia had been an oil producing state for many years prior to 1891, it was not until that year that the legislature of that State adopted its first conservation law. Under the statute, an operator, upon abandoning an oil or gas well, was required to plug the same to protect the oil and gas sand from fresh water.[9] Later, all of these states enlarged the scope of their statutes designed to protect the oil and gas producing formation from water infiltration.[10]

As the business of producing oil extended to other states, and the need for similar conservation measures became apparent, statutes of similar import were adopted.[11] The citations under the note just indicated are progressive.

As experience grew, former statutes relating to the subject were repealed, amended, or enlarged. The statutory law relating to water intrusion may be thus epitomized: (1) Before drilling into the producing formation, an operator is required to case off all water. (2) Before abandoning an oil or gas well, the operator is required to plug the well in a specified manner, frequently under the direction and supervision of a state official, to prevent the penetration of the producing strata by water. (3) A violation of the statute is declared a misdemeanor and punished accordingly. (4) As a further remedy, the owner or lessee of adjacent or neighboring land underlaid by the same deposit may enter and plug the well if the operator controlling the same fails or neglects to do so, the statute providing that in such circumstances the expense of plugging may be recovered from the delinquent operator. Some of the more recent enactments delegate to some conservation agency of the state the power to prevent injury to the producing formations by water infiltration.[12]

In several jurisdictions, prosecutions under these statutes have been upheld.[13]

Moreover, the right of the adjoining owner to enter and plug an abandoned well and to recover the expense thereof has been upheld.[14]

Even at common law, a neighboring lessee may recover damages from an operator who fails to plug a well to prevent water intrusion and where that result ensues.[15]

The constitutionality of a statute designed to protect producing formations from water has never been raised—probably for the reason that this is a clear exercise of the police power. A statute of this sort is nothing more or less than a statute to abate a private nuisance, on the principle that no man may so use his property as unreasonably to injure the property of another. Such would be the obvious effect of any act of an operator that would result in water penetrating an oil and gas formation, held in common by him and his neighbors.

(B)

TREATING the matter chronologically, the second type of conservation statute was that designed primarily to prevent the waste of natural gas. A consideration of these measures and of the decisions of the court applying them will provide a background for an inquiry into three important questions which control the whole subject of conservation laws:

First, we must determine whether the police power regulating the drilling and operation of oil wells rests upon the correlative rights and obligations of operators in the same pool, or upon the broader foundation of the general welfare.

Second, if the basis for the exercise of police power in this connection is the correlative rights and obligations of the operators in a common pool rather than the general welfare, then how far may regulation go? Should it be confined to the prevention of waste, or can it bring about a proportional taking by the operators from the common pool?

Third, is there such intrinsic difference between natural gas and petroleum that statutory regulation involving the former substance might be justified where a similar regulation involving petroleum might be within the condemnation of the private property guaranties of the fourteenth amendment and of the state constitution. The Indiana gas conservation statutes, the decisions of the Supreme Court of that state, and the holding of the Supreme Court of the United States in Ohio Oil Co. v. Indiana, shed an interesting light on these questions.

It is impossible to understand the Indiana gas legislation and the decisions in relation thereto unless we have a definite appreciation of the economic conditions then existing in Indiana which brought about the statutory enactments hereinafter to be considered and clearly influenced the courts of that jurisdiction in their decisions in this regard.

Prior to 1886, while the people of the State of Indiana were engaged in manufacturing to a limited extent, strictly speaking Indiana was classed as an agricultural State. Beginning at the time indicated, and expanding with remarkable rapidity, one of the largest and most important gas fields ever discovered was developed in about nine counties of central Indiana.

Historians of Indiana speak of the "natural gas craze" which prevailed in that State beginning in 1886 and ending about 1900. An economic revolution similar in many respects to the extraordinary development of Manchester and Leeds in England following the advent of steam power and general use of machinery, and the introduction of the factory system,

6. Acts of Pennsylvania 1878, p. 190.
7. New York Session Laws 1879, Chap. 217.
8. Ohio Acts of 1883, p. 190.
9. West Virginia Laws 1891, p. 317.
10. Pennsylvania Laws 1881, p. 110, 1885, p. 145, 1885, p. 29, 1891, p. 122, 1917, p. 748, 1921, p. 912.
New York Acts 1919, p. 855.
Ohio Acts 1899, p. 48, 1893, p. 24, 1910, p. 337.
West Virginia Acts 1897, p. 114.

11. Indiana (as to natural gas) Session Laws 1889, p. 369, Session Laws 1893, p. 300, Session Laws 1903, p. 212, Session Laws 1909, p. 234.
Kentucky Acts 1892, p. 60, Acts 1906, 280.
Tennessee Acts 1895, Chap. 217.
Illinois Laws 1905, p. 326, 1911, p. 426, 1923, p. 462.
Kansas Act 1891, Chap. 151.
Oklahoma Session Laws 1905, p. 309.
Texas Session Laws 1899, p. 68, Session Laws 1905, p. 228, Session Laws 1913, p. 212, Session Laws 1919, p. 285.
Louisiana Laws 1906, p. 111, 1910, p. 313.
Arkansas Session Laws 1905, p. 635, 1917, p. 890, 1923, p. 555.
New Mexico Laws 1912, Chap. 25, 1921, Chap. 144.
Colorado Laws 1915, p. 373.
Wyoming Session Laws 1905, Chap. 77, 1913, Chap. 46.
Montana Laws 1917, Chap. 43, 1921, Chap. 244.
California Session Laws 1903, p. 399, 1909, p. 586, 1915 California Statutes Section 1404, 1917 California Statutes, Section 1586.
Utah Compiled Laws 1917, Section 6306-B.

12. California Act of June 10, 1915, Statutes Section 1404, Act of June 1, 1927 Statutes Section 1586, Act of May 25, 1919, Statutes 1165.
Montana Session Laws 1925, p. 56.
Wyoming Session Laws 1921, p. 157.
Colorado Laws 1927.
New Mexico Laws of 1925, chapter 121.
Arkansas Acts of 1923, p. 555.
Louisiana Laws 1920, p. 481, 1924, p. 594, 1924, p. 605, 1926, 190.
Texas Session Laws 1919, P. 285.

13. Ohio v. Oak Harbor Gas Co. 53 Ohio State 347 (———) Seaboard Oil Co. v. Commonwealth, 237 SW 48 (Ky.) 1922. See also State v. Foster 189 Pac. 953, (Kans. 1920) Southwestern Oil & Gas Co. v. Kimball, 224 SW 1111 (Tex. C. C. A. 1920).

14. Steelsmith v. Aiken, 14th Pa. Superior Court, 226 Palmer Corp., v. Collins, 284 SW 95 (Ky.) 1926. See also Martel v. Hall Oil Co. 253 Pac. 862 (Wyo. 1927).
In Heard v. Nichols et al, 293 SW 805 (Tex. Com. App. 1927) it is held that where a lessee does not plug a well the owner of the land may do so.

15. Atkinson v. Virginia Oil & Gas Co., 79 SE 647 (West Va. 1913).
Collins v. Chartiers Valley Gas Company 6 L. R. A., 280 (Pa. 1890). Here, the defendant, while drilling for oil, permitted salt water from a lower strata to rise and mix with the fresh water strata, and upon the principle that this constituted a nuisance the recovery in damages was upheld.

ensued. Factories and manufacturing plants of every sort, size, and description, attracted by a cheap and efficient fuel, moved into the gas belt from nearly every section of the United States. Local capital, enthused over the prospects, built numerous other manufacturing establishments in the same locality.

Villages became populous towns and towns became cities. These communities, in less than a decade, increased their population from two to fifteenfold. In the meanwhile, the larger cities and towns in Indiana, outside of the gas belt, were piped for natural gas for domestic purposes. The state capitol and all of the other large state institutions were equipped for its use. The people of Indiana actually came to believe that their whole industrial system and, in a somewhat less degree, their general prosperity and well-being, were dependent upon natural gas and upon its conservation for as long a period as possible.

Just prior to 1889, a large pipe line for the transportation of natural gas was constructed from the Indiana gas belt to the City of Chicago for the purpose of marketing natural gas in that important metropolis. A use of this nature threatened the prosperity of the Indiana manufacturing centers. Accordingly, that year Indiana adopted its first conservation measure. The statute prohibited two things: Primarily, the transportation of natural gas by pipe line beyond the boundaries of the State; and, Secondly, the waste of natural gas by whatever means.[16]

The transportation feature of the statute was so clearly unconstitutional as an unlawful interference with interstate commerce that this provision promptly was so held by the Supreme Court.[17] But the people were not to be denied.

At the ensuing session of the legislature, it was sought by indirect means to do what had already been judicially condemned. It was enacted that gas could not be transported by pipe line at a pressure in excess of 300 pounds per square inch, nor otherwise than by the natural pressure of the gas flowing into the wells. A further provision was added to the effect that the flow of a natural gas well, or the increasing or maintenance of the flow of natural gas through pipe line could not be increased by any artificial process or appliance.[18] These physical impediments absolutely prevented the piping of gas beyond the boundaries of the state and, although it was pointed out in a vigorous dissenting opinion that the underlying purpose of the legislature was to prevent the piping of gas to points outside the state, the constitutionality of this statute was upheld on the ground that the statute was a regulation of a dangerous agency and, therefore, within the police power of the state.[19]

At the same session of the legislature, it was provided that the use of natural gas for illuminating purposes in flambeau lights was a wasteful and extravagant use thereof, and dangerous to the public good, and the practice was prohibited. This is an instance of legislative fiat declaring the use to which private property may be put, and will receive more extended treatment later. In the meanwhile, petroleum was discovered in a formation which underlaid Indiana's prolific gas-bearing sand.

Operators interested in oil production only, while drilling to the greater depth for oil, would permit large quantities of gas to go to waste. In the modern view, the practice was indefensible and economically unsound. In this situation, the State of Indiana enacted another police measure which takes its high importance from the fact that its constitutionality was questioned in the most celebrated oil conservation case ever decided, Ohio Oil Co. v. Indiana. This statute was passed in 1893 and provided that neither oil nor gas should be permitted to flow or escape into the open air for a period longer than two days next after discovery.

After this period, the substances were required to be safely and securely confined in the well, pipes, or other receptacles.[20] Later, the penalty for a violation of this statute was enlarged.[21] When the Indiana gas field was so depleted that it was physically impossible to transport natural gas beyond the boundaries of the

16. Indiana Session Laws 1889, p. 369.
17. State ex rel Corwin v. Indiana Oil, Gas & Mining Co. 22 NE. 778, (Ind.) 1889.
18. Indiana Session Laws 1891, p. 89.
19. Jamieson v. Indiana Natural Gas & Oil Co. 28 N. E. 76, (Ind.) 1891.
20. Indiana Session Laws 1893, p. 300.
21. Indiana Session Laws 1899, p. 86.

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state, and at a time when the pressure and volume of the gas supply had so declined that gas could not be piped to Indiana cities outside of the gas belt unless the act of March 4, 1891, prohibiting pressure in excess of 300 pounds per square inch and prohibiting the production of natural gas by artificial means, was repealed, the legislature took that action.[22]

This recital of economic conditions then prevailing in Indiana, and of the legislative history of the period relating thereto, clearly should demonstrate that the Indiana conservation statutes were the result of what was conceived to be a great public emergency, involving in a very high degree the welfare and prosperity of the people of the State.

It is just as obvious that the critical economic condition growing out of the waste of natural gas had an important if not controlling, influence upon the Supreme Court of Indiana in its holdings in relation to the conservation laws of that state.

In prosecutions under the statute requiring the confinement of gas two days after discovery, the immense importance of the substance to the people of Indiana was stressed, and it was held that the purpose of the statute was to conserve this natural resource for the welfare of the people of the state.[23] Such precisely was the attitude of the court in a case involving a prosecution for the burning of natural gas in flambeau lights.[24]

THEN came the decision of the Supreme Court of Indiana in State v. Ohio Oil Co.[25] Here, the oil company was operating for oil which was found in a deeper stratum, and permitted gas to go to waste while operating for oil, contrary to the conservation statute now being considered.

The state, by its attorney general, brought this action to restrain the waste of gas. The defendant claimed that it was interested in oil production solely; owned the right to produce the oil; that it could not produce oil without wasting the gas; and that the statute amounted to a taking of property without due process.

To meet the position that the statute constituted a taking of property, the court declared the extraordinary rule that there was an absolute analogy between natural gas and wild animals and fish, and that, accordingly, before the substance was reduced to possession, the state in its sovereign capacity was the proprietor. If this principle were sound the power of the state to regulate the taking of natural gas was unlimited. The outstanding significance of this case lies in the fact that the notion of correlative rights and obligations among operators in the same pool was completely ignored, the court grounding its decision squarely on the proposition, that the statute was designed to promote the public welfare.

The concluding language of the opinion is interesting: "We, therefore, conclude that the facts stated in the complaint make a case of public nuisance which the appellant has the right to have abated by injunction." Such was the point of view of the United States Circuit Court for Indiana in a case involving a prosecution under this same statute, the court, after referring to the statute, saying: "Its protection concerns public and not private rights. It concerns the whole welfare of the state. The penalty is inflicted for the violation of a statute enacted to secure public and not private rights.[26]

The other Indiana Gas Conservation Cases, in effect at least, were decided on the same principle. This attitude of the Indiana Court rises to high importance because eventually it must be determined whether a state may regulate the business of producing oil, by reason of the correlative situation of operators, or upon the broader ground of public welfare. This brings into view the decision of the Supreme Court of the United States in Ohio Oil Co. v. Indiana,[27] which stands in direct opposition to the holding of the Indiana court that the Waste Statute under consideration was to abate a public nuisance.

The case before the Supreme Court of the United States was determined on the pleadings, the trial court having overruled a demurrer to the state's complaint and sustained a demurrer to the oil company's answer. The following allegations in the complaint of the state are material:

1. The overwhelming importance of the gas supply of central Indiana to the people of the gas belt in particular, to the people of the state generally, and to the state itself as the proprietor and custodian of the public institutions which were using gas for light and fuel.

2. That the gas was in one vast reservoir where it percolated freely, and that the taking or wasting of gas from any place occupied by the reservoir reduced correspondingly the common supply.

3. That the defendant while operating for oil was wasting gas, and that this waste unless restrained would so reduce the pressure in the reservoir that salt water would visit the formation, and greatly injure or completely destroy the supply.

The oil company in its answer rested upon the following allegations:

1. That it owned leases covering

22. Indiana Session Laws 1903, p. 110.
23. Given v. State, 655 NE 750, (Ind. 1903). Bailey v. State, 71 NE 665 (Ind. 1904).
24. Townsend v. State, 47 NE 19 (Ind. 1897).
25. 49 NE, 809 (1898).
26. State v. Alleghany Oil Co. 85 Fed. 870 (1898).

In a very recent case, the Supreme Court of Louisiana dealt with the conservation of natural gas on the ground laid down by the Supreme Court of Indiana. The Court, after saying that natural gas is a natural resource, said:

"The right of the State to protect, conserve, and replenish its natural resources is derived from the ownership of such resources.

"In exercising its authority in the conservation of its natural resources, the State is not dealing with the property of private individuals, nor attempting to regulate the owner's use of private property, but is acting directly with reference to the administration of property held by it under its sovereignty.

State v. Thrift Oil & Gas Co., 110 So. 188 (1926).

In Harkness v. Irion, 11 Fed. Rep. (2nd) 386 (1926), application for mandatory injunction to compel Louisiana Conservation Commission to issue a permit for use of natural gas to manufacture carbon black, it is said: "Such gas is not susceptible of ownership until reduced to possession. Its extraction and use is subject to regulation or *even complete restriction or suppression by the State.*

27. 177 U. S. 190 (1900).

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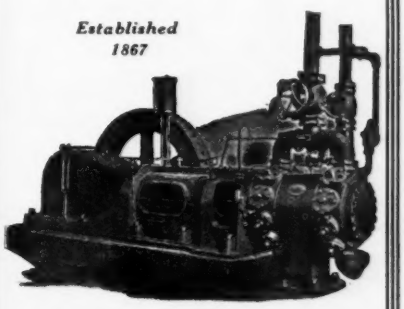

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part of the territory in dispute and had the right to produce oil by virtue thereof.

2. That it was engaged in the oil business exclusively and had no plant or equipment to take care of natural gas.

3. That it had to drill through the gas formation to find oil.

4. That it used the gas coming from its wells to raise the oil, and that this was the usual, natural, and ordinary method of producing oil.

5. That is was impossible for it to produce oil without wasting the gas that came from its oil wells, as alleged in the state's complaint.

Upon these premises, the oil company contended the statute had the effect of preventing it from producing oil, and that this amounted to a taking of private property in contravention of the fourteenth amendment. The constructive thought in the court's decision to the contrary is that it completely repudiated the position of the Supreme Court of Indiana to the effect that the purpose of the law was to abate a public nuisance. The Supreme Court of the United States, basing its holding on the proposition, that owing to the peculiar nature of the property dealt with, the statute was one to abate a private nuisance, that is, to protect all of the surface owners from waste of their common property, the oil and gas deposits.

FINALLY, then, the following conclusions are deducible from the gas conservation laws of Indiana, and from the decisions of the courts in relation thereto:

1. That an economic emergency brought about the enactment of those measures and tempered all of the decisions of the state courts in regard thereto.

2. That the Indiana state courts upheld these police laws on the ground of the public welfare, disregarding completely the correlative situation of the operators interested in the same pool.

3. That the Supreme Court of the United States rejected this view of the case and upheld the statute as a proper exercise of the police power to abate a private as distinguished from a public nuisance. Other oil producing states, in one form or another, adopted both types of the Indiana conservation laws; namely, that prohibiting the use of flambeau lights; and the one preventing the escape of oil or gas into the open air after a designated period from discovery.[28]

The Ohio and West Virginia statutes, cited in the preceding note, qualify the strict requirements of the Indiana statute. It is here provided that the statute prohibiting the waste of gas shall not apply to any well while it is being operated as an oil well. In other words, an oil operator could permit natural gas produced from oil wells to go to waste during the time he was producing oil therefrom. Kansas also put a proviso to its waste statute. It was here declared that the gas waste statute

28. Pa. Laws 1921, 912 West Va. Laws 1891, p. 317, Kansas Laws 1901, Chap. 224 Wyoming Session Laws 1905, Chap. 77, Colorado Laws 1915, p. 373.

did not apply during continuous drilling, that is, drilling into deeper formations.

(C)

A TYPE of conservation statute is the so-called common purchaser provision applicable to concerns both transporting and producing petroleum. Oklahoma was the first state to adopt an Act of this sort and it grew out of a very palpable abuse. A pipe line company, also engaged in the business of purchasing crude oil, held a small producing lease in the Glen pool in Oklahoma where at the time there was no adequate marketing outlet. This company produced its own wells to capacity, ran the oil therefrom through its own pipe line at a time when its neighbors were able to dispose of but a small part of their production.

Owing to the location of the pipe line company's wells, it was actually producing and appropriating a part of the oil of its neighbors. Accordingly, it was enacted that any concern owning or operating a pipe line for the transportation of crude oil, and, likewise, engaged in the business of purchasing crude, should be deemed a common purchaser, charged with the duty of purchasing oil from all producers having access to its pipe line without discrimination. If it could not purchase all oil offered it, it was to buy ratably, and its own production was to be subjected to the same treatment as the production of any other operator.[29] Later, a somewhat similar provision was adopted by several other states in relation to oil.[30] A number of states have a common purchaser law in relation to natural gas.[31]

THE constitutionality of these common purchaser laws has never been brought into question. It is difficult to perceive on what theory any agency, unless it be a public utility, could be required to purchase oil or gas from any particular person. It would infringe upon both the liberty and property provisions of the due process clause.

On the other hand, it is not equally clear that a statute designed to prevent a pipe line purchasing company from running more than its proportion of the total production of a particular pool when there was no outlet for the entire production of the pool would be unconstitutional. We here distinguish between a statute requiring the purchasing of crude oil in a specified manner and one simply limiting the production of an agency having an advantage over its neighbors in taking oil. In brief, the latter might be a valid application of the doctrine of correlative rights among producers in the same pool.

(D)

A NUMBER of states have statutes to the effect that a gas producer may take a specified percentage only of the open flow production of his wells. The provision of the Okla-

29. Oklahoma Session Laws 1909, 168.
30. Louisiana Laws 1920, p. 88.
Kentucky Session Laws 1920, p. 613.
31. Oklahoma Session Laws 1915, p. 400.
Kentucky Session Laws 1920, p. 613.
Louisiana Acts 1918, p. 516.
Arkansas Session Laws 1923, p. 555.

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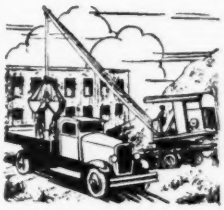

"WELL, I'll tell you," contradicted Mr. Angelo Tranello, Vice President of C. P. Ward Co., one of Rochester's largest contractors, "you've got the wrong idea about Selden's ROADMASTER. When that truck is carrying 4 tons of gravel for us it does not pick up speed as fast as the average car, as you advertise. The truth is—it picks up faster. I honestly mean it. Listen to this:

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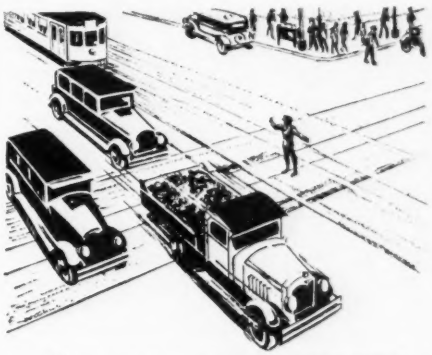

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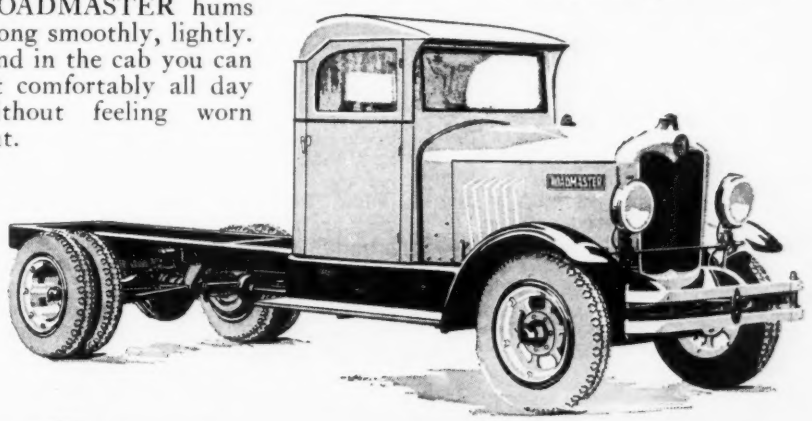

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homa statutes is as follows: "It is hereby prohibited from taking more than 25 per cent of the daily natural flow of any gas well or wells unless for good cause shown under the exigencies of the particular case. The Corporation Commission shall establish a different percentum under the prescribed rules and regulations therefor."[32]

If the purpose of these statutes is to hold the pressure on the gas producing sand for as long as possible to prevent water intrusion which might follow a substantial decline in pressure, the enactments clearly would be constitutional as a proper exercise of the police power. A greater taking by one producer might result in injury to the gas producing properties of his neighbors.

On the other hand, if the purpose of the statute is to bring about a proportional taking on the part of all operators interested in the common deposit without reference to a possible or probable injury to the producing formation, a more difficult question is presented.

(E)

A GROUP of statutes closely related to the ones just alluded to are those prohibiting an oil or gas operator from taking more than his proportion of the potential production of the pool where there is no market for all of the production therefrom. These acts are leveled against the operator and not against the pipe line purchasing company.

In each of these statutory enactments or regulations, the excess of production over the market outlet is defined as "waste." It will be more appropriate to discuss the constitutionality of these measures in another connection.

(F)

ANOTHER class of gas conservation statutes which has received the attention of the courts are the so-called carbon black laws. The use of natural gas for the manufacture of carbon black is prohibited in the state of Wyoming where the supply is located within ten miles of an incorporated town or industrial plant, unless the heat contained therein is actually applied and utilized for other manufacturing or domestic purposes.[33]

This statute was upheld as a valid exercise of the police power of the state of the Supreme Court of the United States, on the ground that it prevented waste.[34]

An identical statute adopted in Montana[35] was held violative of the due process clause of the state constitution by the Supreme Court of that State, the court refusing to following the decision of the Supreme Court of the United States in the Walls case.[36]

While Oklahoma has no statute specifically dealing with the use of natural gas to manufacture carbon black, it is provided that the Corporation Commission, the conservation agency of the state, shall have the power to adopt rules and regulations to prevent the wasteful utilization of natural gas. Under this statute, an order of the Corporation Commission prohibiting the use of natural gas for the manufacture of carbon black was upheld as a regulation within the jurisdiction of the commission, the Court also holding that the act itself was a valid exercise of the police power of the State. Here, again, the necessity for conserving natural gas for the welfare of the people of the state was emphasized.[37]

In Louisiana, the Department of Conservation is vested with authority to determine the manner and extent that natural gas may be used in the manufacture of carbon black.[38]

The Supreme Court of Louisiana intimates that the two statutes referred to in the note just indicated are constitutional.[39]

Arkansas puts an absolute prohibition on the use of natural gas for the manufacture of carbon black, the statute itself declaring such use to be a public nuisance.[40]

Under a Texas statute[41] authorizing the Railroad Commission to promulgate rules and regulations to prevent wasteful utilization of natural gas, the Railroad Commission of that State, in rule No. 41, prohibits the use of natural gas for this purpose where there is any reasonable expectation, present or in the near future, of the utilization of the particular gas supply for domestic or manufacturing purposes. Wherever these carbon black statutes have been considered by the courts, they are sustained from the viewpoint of the public welfare in the direction of conserving a valuable natural resource rather than upon the ground of correlative rights.

(G)

AN INTERESTING type of the more modern conservation statute are those in effect in Wyoming, New Mexico, and Montana. Under these statutes, a State Agency is provided for with power to prescribe and enforce rules and regulations governing the drilling, casing, and abandonment of oil and gas wells, and to prevent the waste of oil and gas therefrom. The rules and regulations to be applied are those promulgated by the Bureau of Mines or by the Secretary of the Interior in relation to public lands of the United States, and such additional rules and regulations as the particular state agency shall prescribe.[42] Here is delegated an all-inclusive power to control the drilling, casing, and abandonment of oil wells, and to prevent the waste of both oil and gas.

(H)

AGAIN stressing the importance of distinguishing between the two legislative powers which in view of constitutional restraint may or may not be exercised in this connection; namely, the power, by statute, to abate a private nuisance, the foundation for which lies in the correlative situation of operators in the same pool; and the power, by statute, to conserve oil or gas for the general welfare of the people of the state, we are now brought to the more comprehensive and detailed enactments which for the time being seem to characterize the effort toward legislative conservation.

The following tendencies of the latest laws upon the subject are clearly manifest; Gas conservation statutes precede measures relating to oil. Moreover, usually separate enactments are resorted to covering the two substances. And, finally, the solicitude of the law makers attaches more to the conservation of natural gas than to petroleum. As these later statutes will receive critical attention hereafter, all that need be done at the moment is to identify them.[43]

All of the enactments just referred to are characterized by one uniform principle: Doubtless, appreciating the difficulty, if not the impossibility, of regulating a highly technical business by hard and fast rules, these statutes provide for conservation in general terms, and vest in an administrative agency the duty of prescribing rules and regulations to carry out the legislative purpose. Such precisely is the character of the recent conservation measures adopted in Montana, Wyoming, and New Mexico, which have already been referred to.

32. Oklahoma Session Laws 1913, p. 171.
Louisiana Acts 1924, p. 594.
Arkansas Session Laws 1921, p. 216.
The Texas Railroad Commission, by statute, has the power to adopt rules and regulations to prevent waste, and rule No. 25 of this body restricts the production of gas wells.
33. Wyoming Acts 1919, Chap. 125.
34. Walls v. Midland Carbon Co., 254 U. S. 300 (1920).
35. Montana Laws 1921, Chap. 125.
36. Gas Products Co. v. Rankin, 207 Pac. 993 (Mont. 1922).
37. Quinton v. Corp. Comm. 224 Pac. 156 (Okla. 1924).
38. Louisiana Laws 1920 p. 481.
Louisiana Laws 1924 p. 594.
39. State v. Thrift Oil & Gas Co. 110 So. 188 (La. 1926).
40. Session Laws 1925 Act No. 350.
41. Texas Session Laws 1919, Chap.
42. New Mexico Laws 1925 Chap. 121.
Wyoming Session Laws 1921, Chap. 157.
Montana Session Laws 1925, p. 56.
43. Oklahoma Session Laws 1913, 439, 1915, 398, 1915, 35.
Louisiana Acts 1912, 151, 1918, 516, 1918, 513, 1920, 88, 1920, 481, 1924, 594, 1924, 605, 1926, 190.
Arkansas Laws 1921, 216, 1923, 555.
Texas Session Laws 1919, 285.
Colorado Session Laws 1927.

(To Be Continued)

Illinois Jobbers to Golf And Eat Chicken

SPRINGFIELD, Aug. 27.—The Scengataha country club of Galesburg, Ill., has been chosen by the Illinois Petroleum Marketers Association as the place of its meeting on Sept. 15. A superior golf course and promise of a chicken dinner are being used as bait by G. A. Primm, secretary, to entice all jobber members to this outing.

The morning will be devoted to business sessions but the afternoon and evening will be given over entirely to amusement. A jobber's championship golf game is scheduled as one of the main attractions. There will also be a ball game, swimming, fishing, boating and other sports.

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[An Exclusive Series of Practical Refining Articles]

Practical Ways to Increase Yield From Cracking Stills

By Donald F. Gerstenberger

Article II

More Profit Per Unit

MORE gasoline from cracking a given quantity of charging stock —and at a lower cost of production, if possible—is the point of view from which Mr. Gerstenberger, a practical refinery operating man, discusses the subject of cracking in this article.

His first article on cracking appeared in the Aug. 17 issue of NATIONAL PETROLEUM NEWS. He will write on other refining subjects exclusively for this publication, all of them along practical lines.

In the accompanying article, Mr. Gerstenberger brings out points of cracking still operation which are sometimes overlooked, control of which are in the operators' hands largely, and which, if followed out, will either add to yield per cycle or reduce the operating cost.

IT IS impossible to set down a formula whereby one can increase the yields from the cracking operation at will; yet there are so many little points that have a bearing on how much gasoline can be obtained, so many "tricks in the trade," as it were, that the writer feels that many can be benefited by his limited experience along this line.

Necessity is the mother of invention. A bad gasoline market must, of necessity, be the father of better yields. The cracking still exists only because it became a hardship to continue to realize a safe margin of profit from the established crude still operation. To be sure, the demand for gasoline, plus the fact that a great many crudes were being brought in which contained very little natural gasoline, and which, as a result, were flooding the market with gas oil and fuel oils, had a bearing on the development also. But this carries us back to the original thought. The over-abundance of these heavier products lowered their price continually, while the price of gasoline continued upward. The result was inevitable. More gasoline from the same crude, and less gas oil and fuel oil were desirable. Cracking was the answer, and immediately, it developed by leaps and bounds, until today we have cracking operations which undoubtedly greatly surpass any of the dreams of those who first made this operation possible.

In the early days of the cracking still, it is safe to say that almost any operation which yielded a reasonable amount of gasoline was profitable. Today, however, we are almost face to face with the same proposition that presented itself to the refiner, prior to the advent of cracking on a commercial basis. The cracking operation of today, with today's market conditions, can lose money faster, or make money easier, than any other self-supporting refinery operation, according to the method of handling.

Unless we watch operations closely, and take advantage of every opportunity for increased yields it is not uncommon to see what should be profit figures appearing on the red side of the ledger. The cost of crude is higher, compared to the market value of the finished products. We pay more for refinery, building, and repair materials. Our labor costs are higher. What does it all mean? Nothing is to be gained by sitting to one side and bewailing bad conditions, to try and ease our feelings in the matter. No business ever existed on what it might do if conditions were different. If we can't swim, we are bound to sink. There is only one answer, and that is more of the higher priced products, and less of the lower priced products from each barrel of crude that passes through the plant. You may say that this is a very wise statement to make on paper, but that the accomplishment in practice is not quite so easy. We will agree to a certain extent, and yet we will also try and point out various ways and means, gleaned from actual experience, of approaching the goal.

FIRST of all we will consider the ordinary, every-day things, which have a direct bearing on the subject. Among these, and not the least by any means, is instilling in the minds of the men who have direct contact with the cracking operation that no operation is so good but that there is room for improvement. Get them to thinking one jump ahead of the horse. Teach them to understand that there is no such word as can't. The writer had the experience of seeing a certain type of fractionating equipment turned down by one of the largest companies, which several years later proved to be the best piece of equipment that could be installed for that particular operation, simply because the men in close contact with the operation said can't.

Second among the every-day things is the proper maintaining of temperatures. Assuming you are operating your stills at the maximum cracking temperatures, under a given set of conditions, the writer wishes to call attention to the fact that it is possible to lose a good percentage of gasoline, simply by too much variance in the temperature of the oil leaving the still, or what we will hereafter term the oil outlet temperature. A great many operators consider a variance of 10 degrees justifiable with the average type of tubular cracking still. They are right in saying that it is very hard to maintain a more even control of the temperature at the outlet of the still, because the volume of oil is likely to vary slightly as the steam pressure varies, or the temperature of the oil entering the still is likely to vary, or the fuel will vary thereby causing a change in furnace temperature, and they will offer many other excuses. Yet these excuses, as good as they may sound, can be eliminated to certain extent, and a more even temperature can be approached.

The temperature of the oil entering the still should be recorded just as acurately as that of the oil leaving the still. A good fireman will soon learn to expect a certain variance in the oil outlet temperature as the inlet temperature varies. Consequently, he can correct his fire prior to the actual change, and prevent it.

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A steady flow of oil is essential to maintain an even oil outlet temperature. The installation of suitable speed governors or stroke regulators on the feed pumps will help overcome to a great extent any irregularity at this point.

Efforts should be made to maintain as uniform an oil inlet temperature as possible. With this accomplished, and a steady rate of flow established, the fireman has nothing to trouble him but maintaining the proper firebox temperature, and a close observation of the oil outlet temperature.

Where continuous recording charts of the oil outlet temperature are maintained, it becomes interesting to apply a planometer to them, to see how closely the actual temperature called for is approached. In most cases, we believe you will find that the average temperature will be from 3 to 5 degrees lower than the temperature asked for. If so, this will have a strong bearing on the yields obtained. For example, let us assume a cracking temperature of 885 degrees as being desirable. From experience, I would say that there would be at least 4 to 5 per cent more gasoline at 885 than at 880. What then is happening, if you can crack at 885, but due to temperature variance, the average temperature maintained is 881. When the critical temperatue is approached, a degree is like an inch on the end of your nose. It shows up in no small proportions, and as each degree is added, increased gasoline is the marked result. If you are averaging a temperature 3 or 4 degrees lower than can be maintained, you are cheating yourself out of just so much gasoline. It may be 2 per cent, it may only be one per cent, but it is that small amount here and there that swells the grand total.

Good fractionating is another requirement of good yields. This has more direct bearing than some may consider. Poor fractionating doesn't only mean a little higher treating and rerunning cost, but it means percentage of gasoline. The effect is three-fold. First, as the percentage of bottoms increases in the pressure distillate to be treated, the required amount of acid for treating increases. This increased amount of acid very readily attacks the lighter ends, thereby increasing the treating loss, and cutting down the ultimate quantity of final gasoline. Second, the work of removing the gasoline from the bottoms at the rerun stills is increased, and it is possible to leave some fractions behind in the rerunning, which if given time to completely fractionate and distill, would come over as gasoline. Third, and most important in the mind of the writer, is the effect at the cracking still itself, of poor fractionation. When poor fractionation occurs, it not only means heavy ends in the distillate, but it likewise means light ends in the condensates which are to be recycled.

THE first consideration in successful cracking is the initial boiling point of the oil entering the cracking still. Oils of low initial boiling point, with consequent low boiling point ranges, require higher pressures. Likewise, oils of higher boiling point ranges can be profitably cracked at lower pressures. Or in so many words, the lighter fractions have no place in the feed stock to the cracking still, when they can be eliminated, for they are simply taking up space of oils which could be more profitably cracked. This is aside from the danger of excessive evaporation in the tubes. Consequently poor fractionation can decidely affect the yield of gasoline.

Another item which frequently affects the yield of gasoline from many cracking operations is the temperature of the gasoline distillate passing from the system to the receiving tanks. High temperature streams mean, of course, that either more condensing and cooling surface is necessary, or that, where scaly water is present, this part of the equipment is sometimes neglected, and not kept sufficiently clean. The remedy is apparent. Where proper absorption systems are in use, high temperature streams are not so serious, although the proper place for the condensation of gasoline is at its source, and not at the absorption plant, where it may be carried in the form of condensable vapors. The absorption plant exists, to accomplish what cannot be accomplished at the cracking still itself, and is not for the purpose of overcoming a deficiency of other equipment.

One of the main factors in increasing yields of gasoline from the cracking still is ability to increase the temperature of the oil entering the still.

Let us consider for sake of comparison a still operated under the following conditions:

Oil inlet temperature ..... 450°F.
Oil outlet temperature..... 880°F.
Furnace temperature .....1500°F.
Total feed rate per hour....4800 Gals.
Fresh feed in total feed..... 60%

Now provide a means to increase the oil inlet temperature from 450 degrees to 600. What happens? Any one of several things. If the same total feed rate is maintained with the same oil outlet temperature, the furnace temperature must of necessity be reduced. But perhaps it has been definitely proven that we may safely operate the still at 1500 degrees furnace temperature. As a result, the total feed rate may be increased, thereby increasing the capacity of the still. But it doesn't

SOMETHING OF INTEREST
TO THE JOBBER
A Complete Line of Petroleum Products

Col-Tex... anti-knock gasoline — invites your special interest. It is strictly straight run direct from crude—of 52/54 gravity—containing anti-knock value equal to 25% benzol blend—is doctor and corrosion test—free from carbon and tarry substances—with a low initial boiling point and an endpoint under 437.

As an anti-knock gasoline, just as it comes from the stills, it is an extraordinary product—has 15% more power and mileage than ordinary gasoline. It presents special inducements to the jobber who wishes to blend with benzol, effecting a direct saving in the amount of benzol required to provide a given anti-knock value—also is especially adapted to blending with natural gasoline for higher gravities.

We have a number of jobbers now buying this product in large quantities to meet competition in their respective territories, and they tell us they would use nothing else. We make contracts for COL-TEX, and are prepared to give exclusive territorial rights.

Other Gasolines... We are manufacturing and are prepared to furnish upon contract or spot quotation, 60/62-400 endpoint gasolines, 58/60 U. S. Motor gasolines, 58/60-450 endpoint gasolines, all thoroughly treated, water-white, doctor and corrosion test. Our products are all refined and treated under the latest and most approved refinery methods and their qualities are guaranteed.

Industrial Napthas... For years we have specialized in industrial napthas—in developing and manufacturing specific products to meet the requirements of paint and varnish makers, rubber goods manufacturers and cleaners. We may be able to help you open up new avenues of business if you will write us and make known your needs.

Rub-Sol... Special high test rubber solvent gasoline.

Rubberlene... Special gasoline for spreading machine cement.

Dip-Sol... For rubber dip goods trade.

Dryolene... Our standard grade of varnish makers and painters naptha.

Mineral Spirits... For paint and other industries

Stod-Sol... A super-quality safety solvent cleaning naptha—developed in collaboration with Dixie Stoddard of Atlanta, a former president of the National Association of Dyers and Cleaners, and adopted at their Kansas City Convention, January 1926.

We are in a position to furnish any petroleum products or by-product you may require from our three refineries—running in excess of 10,000 barrels daily select—Mid-Continent crude.

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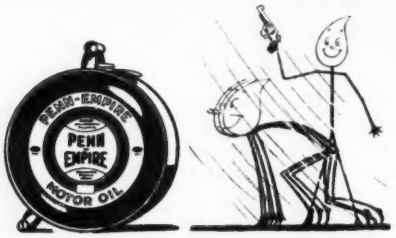

When winter comes and its chill we feel
Penn-Empire Oil Drops won't congeal
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In sleet, frost, rain or snow.

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Another month or so and we'll be thinking about tire chains, anti-freeze solutions . . . . and the kind of oil that will give good service in winter weather.

Penn-Empire is getting ready for winter too. It's getting ready to show motorists, dealers and jobbers what a Sharples processed (completely dewaxed) 100% Pennsylvania Oil can do when it comes to lubricating service under severe conditions . . . . when it's refined the Penn-Empire way by men who have "grown up" with Pennsylvania Oils.

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"When You Buy Penn-Empire You Get The Best"

HOW TO PREVENT EVAPORATION and FIRE LOSSES

Every oil man can learn much of value about evaporation and fire prevention from the articles on this subject written by real engineers, for

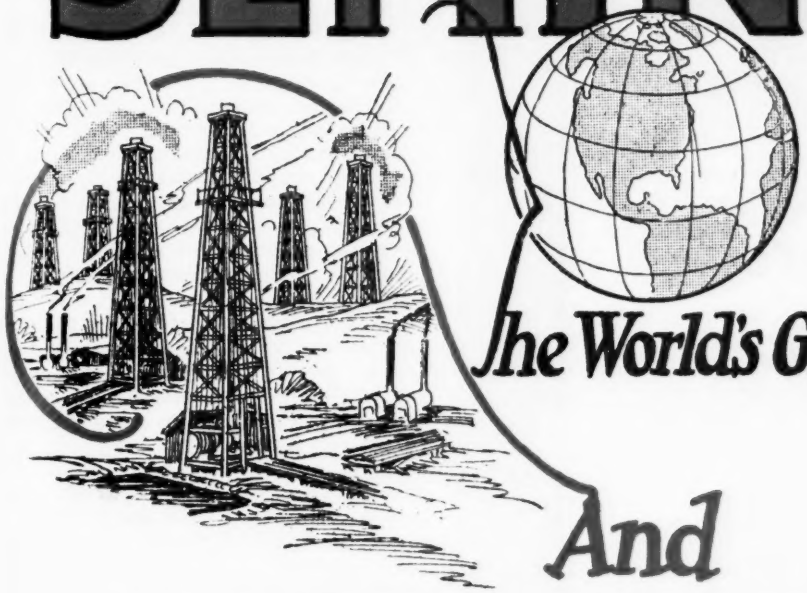
THE ENGINEERING NUMBER
National Petroleum News
September 21

stop there. The oil outlet temperature has been maintained as a maximum at 880 degrees, with a circulation rate of 4800 gallons per hour. This was decided upon because too much trouble was not experienced with the tubes, and the still could be cleaned in a reasonable length of time, and yet after each run, the tubes indicated that they had done all the work that they could be called upon to do. But conditions have now been considerably changed. It is possible to now increase the total feed rate to say 5400 gals. per hour without exceeding the 1500 degrees furnace temperature. This increased rate of circulation is going to give a better heat transfer rate through the tube walls, and likewise the increased velocity of the oil is going to prevent the deposition of coke to a certain extent. So we can begin to see where the oil outlet temperature can be raised to that 885 degrees, or even perhaps to 890 degrees, that we have been wanting to attain for so long. The answer is a better yield of gasoline.

ANOTHER advantage of the increased temperature in the feed stock is the raising of the initial boiling point of the oil entering the cracking still. This takes us back to the same result; better feed stocks and better yields.

And still there is yet another advantage as a result of this higher temperature feed, with the attendant increased circulating rate. In many instances the rise in temperature of the feed stock and an increased recycle rate can go hand in hand. We assumed an original feed rate of 4800 gals. with 60% of this as fresh feed, the balance recycle stock. After we have succeeded in raising the oil inlet temperature to 600 degrees, we have assumed a feed rate of 5400 gals. per hour, or an increase of 600 gals. The amount of fresh feed in the total feed under the original conditions was 2880 gals. per hour. By maintaining this same amount of fresh feed, and allowing the increase in the feed rate of 600 gals. to be an increased amount of recycle stock, it can readily be seen what will happen. Assuming that the same amount of gasoline will be obtained, after the feed rate is increased, from the amount of fresh feed which has been maintained, and considered from all angles it will be, then any gasoline obtained from the additional 600 gals. per hour which is recycled, will add to the final amount, and consequently increase the percentage, because we have not changed the amount of fresh feed, it still being maintained at the original rate of 2880 gals. per hour. The writer has seen increases amounting to from 5% to 7% of gasoline yield by this method. This, plus the possibility of increased cracking temperatures makes a high temperature feed stock very desirable, from the

SEMINOLE



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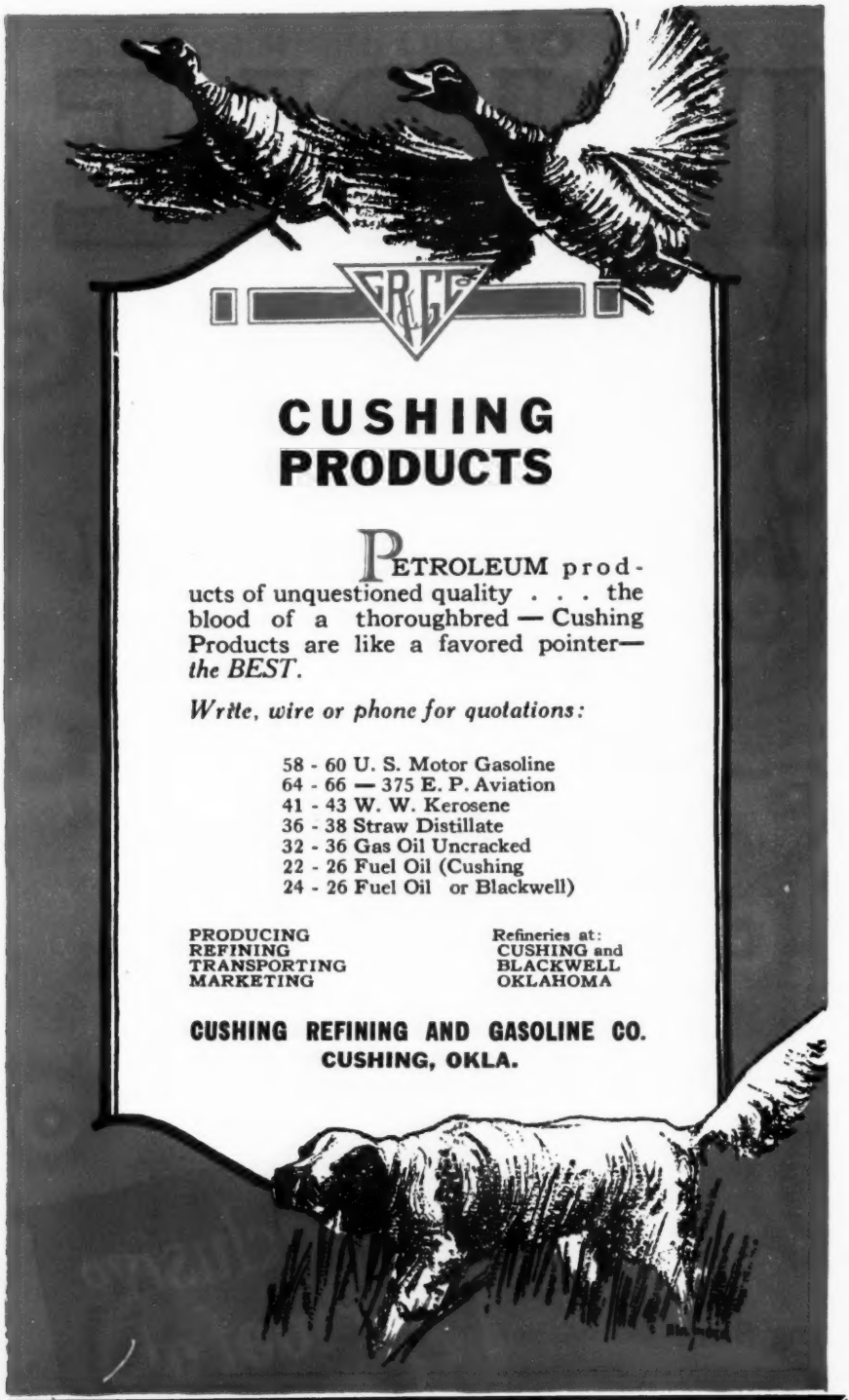

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Regardless of what your pumping problem is—you will find much of value on the subject written by real pump engineers in

THE ENGINEERING NUMBER
of National Petroleum News — Out On September 21

view-point of yields as well as economy.

Means of increasing the temperature of the feed stock will be taken up in a later article, it being sufficient to mention here that the best method when possible is to pick up the waste heat from the vapors and condensates from the same operation. Also it should be noted that it is advisable to preheat the feed stock prior to its entry to the high pressure feed pumps, so that the lighter ends will be allowed to vaporize, and thus be eliminated from the feed going to the cracking still. Another means of preheating, when available, is by the use of exhaust steam, which can be used as an initial heating medium prior to bringing the oil into contact with the higher temperature vapors and condensates.

All condensates to be recycled should be returned hot. Sometimes these may be fed back to the tower prior to the one from which they are obtained. This is especially desirable if there is an excess of condensate. There refractionation reduces this quantity considerably, and removes some of the lighter ends.

When there is present a considerable quantity of undesirable light ends, the use of what is commonly called a re-boiler comes in for its part under such conditions. The application of heat or steam to such a vessel, will remove some of these lighter fractions before the condensate is fed back to the system. This piece of equipment is also very useful in making a marketable gas oil from the cracking system, where certain flash and gravity specifications must be met.

The oil is gravitated into the reboiler hot from the towers which cuts down considerably the amount of fire or steam necessary. Where the fractionating is done under pressure, the use of reduced pressure on the reboiler eliminates the necessity of fire or steam. The re-boiler can also be considered in helping to increase the yields from the cracking operation. Where marketable gas oil is being made from the operation, you are insured it is free of all heavy naphtha fractions if it first passes through the re-boiler, and also, the removal of light ends from the recycle stock makes room for more heavier fractions, there-by giving rise to additional opportunity for better cracking.

LOS ANGELES—Joseph Jensen, chief geologist for the Associated Oil Co., Los Angeles, is taking a vacation this year, but he wonders where he will spend his rest period, as he secured a summons to give expert testimony in an oil case at Ventura the day he had intended speeding away in his trusty automobile, with the family in the back seat. Then he remained over to hear Messrs. DeGolyer and Bain talk to the petroleum engineers in Los Angeles Aug. 15.

British Petroleum Imports Increase 6.8 Per Cent First Half of 1927

CLEVELAND, Aug. 27

IMPORTS of crude and refined oil into the United Kingdom in the first half of 1927 were 6.8 per cent larger than imports in the first half of 1926, according to U. S. Trade Commissioner Homer S. Fox at London. The United Kingdom is the largest foreign market for American oil. Exports of petroleum products were less than in the first half of 1926 but reexports were slightly larger. Mr. Fox's summary of the British petroleum trade as published in Commerce Reports follows:

"The British petroleum trade during the first six months of 1927 was featured by increased importation and indicated consumption of petroleum products, and particularly by the heavy increase in the imports of crude petroleum and distillates for refining. In the second quarter imports of crude were about 28 per cent over the corresponding period of last year, and represented about the same pecentage of increase over the first quarter of 1927.

"The total crude imports for the six months have been about 35 per cent above the first half of 1926. Imports of mineral oils other than crude during the second quarter showed a small increase over the first quarter, and were about 13 per cent above the receipts of the second quarter of 1926. The total importation of all oils except crude during the January to June period was about 25 per cent over 1926. The United States supplied about 42 per cent of the total imports of all oils, and about 65 per cent of the refinery products, receipts of American oils being considerably larger in the second quarter than in the first.

"TOTAL British petroleum imports in the first six months of 1927 came to 1,073,649,632 imperial gallons, compared with 837,216,938 gallons in the first half of 1925 and 805,540,064 in the first half of 1925. The 1927 importation is divisible into 382,037,032 gallons of crude and 691,612,600 of other mineral oils.

"The largest quantity increase in the imports of any individual item was in crude, receipts of which were nearly 100,000,000 gallons above the corresponding imports in 1926. Shipments of Persian crude, at 267,160,194 gallons, show an increase of about 25 per cent over the first half of 1926, but a still greater increase is noted in the receipts of crude from other countries, which during the first half of 1927, amounted to 114,876,838 gallons, or over 45 per cent more than last year. This latter increase is accounted for largely by increased receipts from Venezuela and Colombia. From the latter country about 11,000,000 gallons are reported in the preliminary figures for the six months, compared with about 7,500,000 for the whole of 1926.

"Lubricating oil imports show a slight decrease from 1926 and stand at about the same figure as that for the first half of 1925. As increased consumption—especially of motor lubricants—is indicated by the increasing sales of motor cars in the United Kingdom, the slight decrease in imports this year may be attributable to the increase in local output. The United States continues as the chief source of the imported product, Russia taking second place this year with contributions of about 3,000,000 gallons. A few shipments have also been received from Rumania and Mexico.

"A CONSIDERABLE increase in the imports of fuel is recorded, owing chiefly to much larger receipts from the United States, these according to preliminary figures, being larger for the six months of 1927 than for the whole of 1926. Curaco, Mexico, and Trinidad were important sources of supply for fuel oil, with miscellaneous shipments from Rumania, Colombia, and other countries. Imports of fuel oil represent the largest quantity increase of any petroleum product, being nearly 75,000,000 gallons more than during the first half of 1926. Fuel oil supplied for the bunkering of ships in the foreign trade amounted to 125,961,410 gallons, compared with 123,237,855 for the January-June period of 1926.

"Receipts of gas oil continue to increase, the imports during the six-month period being 67 per cent above last year. There was a considerable increase in receipts of American gas oil and a little less from Mexico, but with miscellaneous shipments from a considerable number of sources, including Russia, Curacao, Rumania, the Dutch East Indies and one cargo of over 2,000,000 gallons from Trinidad.

"In spite of the large increase in refinery output indicated by the receipts of crude, the imports of gasoline have increased by about 20,000,000 over those for the first half of 1926. An increased consumption of at least 15 per cent is indicated thus far this year, assuming the percentage of gasoline obtained from the crude and distillates treated by British refineries to have been the same as in 1926 (in 1926 gasoline was about 30 per cent over all of the products treated, including the through put of cracking plants), and taking into consideration a slight decrease in the total net exports of gasoline. In view of the increased sales of motor cars, it seems likely that this rate of increase will be at least maintained during the rest of the year.

"RECEIPTS of American gasoline were somewhat larger than last year, and imports from Russia have been up by about 75 per cent. Slightly larger receipts were also recorded from Rumania, with appreciable quantities from the Dutch East Indies and some miscellaneous shipments from other sources.

"Kerosene imports were larger by nearly 21,000,000 gallons, or about 25 per cent—this increase being undoubtedly explained, at least in part, by larger shipments, especially from Russia, for cracking purposes. Imports of Russian kerosene during the first half of 1927 have been approximately double those for the first half of 1926. This increase accounts for about half of the increase in the total, the remainder being due to larger shipments from the United States and Rumania.

"Comparative import figures for the January-June periods of 1926, and 1927 are as follows:

Product	1926 Imperial gallons	1927 Imperial gallons
Crude	283,000,423	382,037,032
Gasoline	258,385,074	278,368,428
Kerosene	85,961,948	106,613,780
Spirit (other than motor)	1,287,439	3,936,549
Fuel oil	125,978,436	199,400,055
Gas oil	35,151,386	58,966,259
Lubricating oil	47,294,495	44,215,849
Other products	157,737	111,680
Total refined	554,216,515	691,612,600
	Hundredweight	Hundredweight
Paraffin wax	589,913	678,386

"As exports of petroleum during the six months were considerably less than in 1926, the total net shipments, in spite of a slight increase in reexports, show a decline for the first half of 1927, so that the indicated consumption of petroleum products this year is appreciably more than last. There were decided declines in shipments of gasoline, kerosene and fuel oil, notwithstanding the increased refinery of this period. Increases were recorded in exports of lubricating oils and gas oil, but the actual quantities of these products are rel-

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BULK STATION ENGINEERING

An article written by an oil company engineer, a man who has designed and installed hundreds of bulk stations large and small —in the north and in the south,—an article that will give you many valuable ideas.

WATCH FOR THIS ARTICLE
SEPTEMBER 21

THE ENGINEERING NUMBER
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atively small. Paraffin wax exports were up slightly from the 1926 record, but were still much below the 1925 figure.

"Comparative statistics for the exports of the first six months of each of the three years are as follows:

	1926 Imperial gallons	1927 Imperial gallons
Exports:		
Gasoline	15,201,278	12,411,842
Other spirit	40,702	18,461
Kerosene	12,477,147	10,513,135
Fuel oil	30,688,895	24,175,188
Gas oil	1,091,539	1,703,033
Lubricating oil	3,567,274	4,923,604
Other products	115,857	121,993
Total	63,182,692	53,867,256
	Hundredweight	**Hundred weight**
Paraffin wax	71,405	78,224
	Imperial	**Imperial**
Reexports:	**gallons**	**gallons**
Gasoline	8,314,981	8,285,370
Other spirit	23,079	8,839
Kerosene	2,468,315	4,382,177
Fuel oil	468,314	3,770,922
Gas oil	132,397	342,704
Lubricating oil	1,097,303	804,513
Other products	3,594	70
Total	12,507,983	17,594,595
	Hundredweight	**Hundredweight**
Paraffin wax	52,778	79,395

"Petroleum reexports from the United Kingdom, which are very small by comparison with imports—representing only a fraction of 1 per cent of the total receipts—showed a large percentage increase over the first half of 1926, but this increase was small in actual quantity, total shipments amounting to only 17,500,000 gallons compared with 12,500,000 in the first six months of last year. The 1927 total represents only about half of the corresponding 1925 figure.

"ASIDE from the increased importation and consumption of petroleum products, which in the case of some products—notably gasoline—has been accompanied by lower prices, both wholesale and retail, the item of most popular interest in connection with the petroleum trade has perhaps been the campaign waged against the consumption of Soviet oil products, which came to a head at the time of the severance of diplomatic relations between the two countries.

"There has been a considerable volume of opinion in the United Kingdom which held that the petroleum products obtained from Russia were really British property—at least in large measure, as it is asserted that they came from British properties confiscated by the Soviet government. After the severance of diplomatic relations there was much discussion as to the possibility of taking legal action to prevent the sale of Soviet oil in the United Kingdom or even to confiscate such oil as did come in on behalf of the former owners of British oil properties in Russia. Prospects for any such action appear doubtful thus far, and there appears to have been little or no diminution in the importation and sale of Russian oil products in this country. Some temporary effect has undoubtedly been felt as a result of an active press campaign against the retail selling of Russian petrol, but at the moment it seems doubtful that this will ultimately result in any marked reduction in total sales."

Canada's Gasoline Output Gains 57,000,000 Gals.

TORONTO, Aug. 27.—At the 17 refineries operating in Canada during 1926 and at six compounding plants, petroleum products valued at $67,956,301 were produced, which value is an increase of $17,000,000 over 1925 value. Capital employed in these plants totaled $57,178,125 and the average number of employes was 3.753. Cost of raw materials was $51,172,159.

These plants produced 222,114,669 imperial gallons of gasoline, which is an increase of 57,285,194 gallons over 1925 output. Selling value of the 1926 output was $40,462,466 or 18 cents per imperial gallon, which is an increase of 2 cents per gallon over 1925 value.

Fuel and gas oil output totaled 228,474,212 gallons, of which 38,473,341 gallons were used for fuel by the reporting plants and 190,000,871 gallons were sold. The latter figure is an increase of nearly 55,000,000 gallons over 1925 demand.

Kerosene demand decreased 8,400,000 gallons, to 36,629,657 gallons. Lube oil output increased over 2,000,000 gallons, to 17,907,102 gallons in 1926.

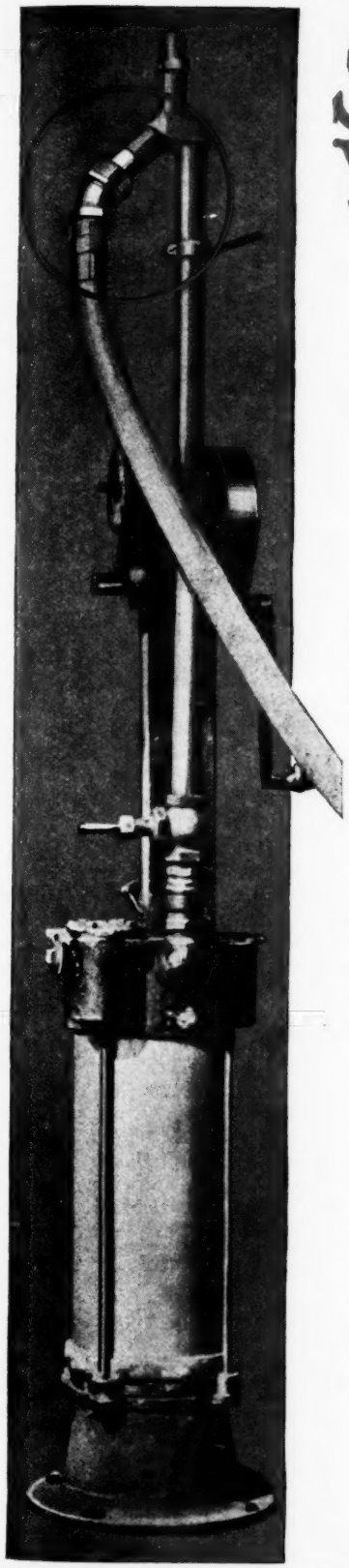
Wax and candle demand fell off over 6,000,000 pounds, to 9,858,490 pounds in 1926.

Crude runs to stills were 12,203,286 gallons, valued at $1,673,632 f.o.b. refinery, as compared with 12,337,192 gallons used in 1925 valued at $1,511,181. During 1926, 573,263,043 gallons of crude were imported at a cost of $45,396,649, as compared with 432,781,409 gallons imported in 1925, costing $33,344,615 in 1925.

Of the 17 plants in operation, five were in Alberta, four in Ontario, three in British Columbia, two in Quebec and one each in Saskatchewan, Manitoba and Nova Scotia. Of the six lube oil and grease plants, three were in Ontario and three in Quebec.

LOS ANGELES.—Charlie Wagner, vice president of Emsco Derrick & Equipment Co. in charge of sales, headquarters at Los Angeles, is spending two weeks in August on a boating trip to Catalina Island, and surrounding waters, accompanied by his family. As a fisherman, Charlie is said to be a fine golfer.

GENESEO, N. Y.—Vincent-Lahr & Stewart, Inc., oil marketer here, has just taken on Colonial oil products for distribution.



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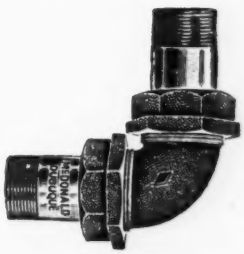

Plate 824

This means economy, quick service and freedom from hose trouble.

McDonald Curb Pump Swing Joints are made of brass in either single or double type with 45 or 90 degree angles for all makes of pumps.

Plate 820

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Our Industry — A Page of Facts and Personalities

National Petroleum News

By Paul Wagner

THE influence of thought on Safety strikes L. A. Taft, chief clerk of the Bayonne terminal of The Texas Co., as paramount.

"A person without the faculty of thought is a menace and a hazard to humanity," he says. "In most cases if thought were followed, and not overruled by some stronger desire, the chances of our being safe would be materially improved. Nature has provided for reasonably quick and safe action in case of emergency, and were thought allowed to govern our actions a little more completely quick action would not be so often necessary."

* * *

IN THE nine years that M. E. Waldron has been in charge of the pipeline department of the Louisiana Oil Refining Corp., Shreveport, he has built the company's transportation system up from about 30 miles of line and one pumping station to approximately 300 miles of line and five large pumping stations. When he took hold in 1918 as superintendent he had a handful of men under him. Now his organization totals about 300 in all. His title was changed to manager from superintendent in 1923, but Mr. Waldron's duties have been identical throughout the period.

* * *

GLOBE-TROTTING oil geologists number prominently among them Frederick G. Clapp of New York City. His latest detail has taken him to Persia.

* * *

A. S. HENLEY, chief geologist and head of the land department of Houston Oil Co. of Texas, Houston, is back at his desk after a vacation spent in the hill region around Kerrville, Texas.

* * *

HERBERT J. KIMLER, who formerly was district engineer in the Texas Panhandle for Roxana Petroleum Corp., now is an assistant to the production superintendent, W. L. Simmons. Kimler was succeeded by Ed Zollar, formerly Braman district engineer in Oklahoma.

* * *

CHARLES V. MEYER, vice president of Standard Oil Co. of New York, is acting executive head of the organization in the absence of Herbert L. Pratt, president, who sailed in August for a period of shooting on a grouse moor he had rented in Scotland.

JOHN G. PEW

JOHN G. (Jack) PEW of the land department of Sun Oil Co., Dallas, has chosen, like many other members of the Pew family, to make a lifework of the oil industry. He started as a scout in the Sun's producing organization, of which his father, J. Edgar Pew, is vice president and general manager. After serving as scout in various Texas and Louisiana districts he was transferred to the land department.

Jack, as he is widely known to his many friends in the industry, is unmarried, affable and in line for a brilliant future.

* * *

THOMAS A. O'DONNELL, chairman of the board of California Petroleum Corp., and formerly president of the American Petroleum Institute, has been spending the summer in Europe, accompanied by Mrs. O'Donnell.

* * *

THE naming of Fred Phillips to the presidency of Gilliland Oil Co., brings another of four brothers to ranking official recognition in the industry. Fred Phillips is a brother of Waite Phillips, principal in the Philmack Co., Tulsa; of Frank Phillips, president of Phillips Petroleum Co., and of L. E. Phillips, vice president of that corporation. P. J. Hurley, who had previously been president of Gilliland Oil Co., remains as chairman of the board. He found it necessary to relinquish more active duties because of his recent election as president of the First Trust Co. of Tulsa.

* * *

PRESIDENT W. S. FARISH of Humble Oil & Refining Co., Houston, spent parts of July and August in the White Mountains, where he took his family for the heated season.

* * *

O. L. V. CHRISTENSEN, driller for the Agwi interests in Colombia, is back in Tampico with the expectation of remaining in Mexico. "I'm glad to be back," he is quoted as saying. "It took me 11 days of miserable river and mule travel to get from Barranquilla to camp. We had no ice there, no medical attention and very little fresh meat. Everything in the way of fresh meat had to be eaten the same day or it went bad."

* * *

UNDERWOOD NAZRO, second vice president of Gulf Production Co., Houston, spent his vacation in the north and east, this year, visiting Pittsburgh and New York among other places.

* * *

REX G. HAMAKER, chief of the engineering department, Humble Oil & Refining Co., spent his vacation in the north and east, returning to Houston headquarters early in September.

* * *

STANLEY P. BROWN, sales manager, Hughes Tool Co., Houston, spent July and August in the Rocky Mountain territory with prospects that he would remain in sight of snow-capped peaks through September. He hied away without leaving any forwarding address for his mail, but most of his time has been spent in and around Boulder.

* * *

A TANK doesn't run over because it is too small, but because someone tries to put too much into it, says C. F. Freed of the Atascadero substation of the Standard Oil Co. of California; in other words, the employee has more to do with "making the world safe" for men and equipment than anything else. That's Freed's way of saying "You've got to be your own Safety guard."

* * *

JOHN W. POOLE, chief chemist, Pierce Oil Co., at Tampico, has resigned in order to direct his activities more specifically to individual research work he will pursue in Mexico. After completing this work he plans to take charge of a research laboratory station in Boston School of Technology, of which he is a graduate.

New Equipment

William E. Brown, manager of the central station department of the New York district of the General Electric Co., has been appointed New York district sales manager of the company. Mr. Brown's headquarters will be at 120 Broadway, New York, according to Theodore Beran, commercial vice-president.

* * *

Ross Heater & Manufacturing Co., Buffalo, N. Y., have established an office at 309 American Exchange Bank Bldg., Dallas, Tex., under the supervision of W. K. Kirby. The Dallas office will handle the states of Texas, Oklahoma, Louisiana and Arkansas. The Ross Heater & Manufacturing Co. are manufacturers of equipment for refineries, casing head gasoline plants and power plants.

* * *

The Alloys Co., subsidiary of The Merrill Co., has just appointed these western representatives to distribute Merco Pipe joining compound: The Republic Supply Co., Denver; Greene Bros., Wichita Falls, Tex.; Robert M. Hartwell Co., Inc., Los Angeles; Gordon & Belyea, Ltd., Vancouver, B. C.; The Beebe Co., Portland, Ore.; B. V. Emery & Co., Inc., Tulsa; R. J. Glendinning & Co., Salt Lake City; Industrial Belting & Supply Co., San Francisco; V. S. Jenkins Co., Seattle; and Atlas Packing & Rubber Co., Seattle.

H. S. Shuey of The Alloys Co. has just completed a trip through the northwest and Pacific mountain states. M. H. Newell, manager, will leave in September for an extended eastern trip to appoint agents in this territory at points where the company does not yet have representation.

* * *

Moore & Kling, Inc., 233 Purchase St., Boston, has off the press "Fuel Oil Specialties", a 14 page pamphlet devoted to about every type of fuel oil storage and distribution equipment. In the pamphlet are described and illustrated double and single poppet constructed foot valves, fill pipe caps, fill pipe and street boxes, boiler and tap bushing, lever shut-off valves, hand rotary pump and suction pumps for water as well as fuel oil storage tanks.

* * *

Young Radiator Co., Racine, Wis., recently organized by F. M. Young, will manufacture heavy-duty radiators for buses, trucks, tractors and for various industrial uses. Mr. Young has been for several years in the automotive industry and with him are associated the engineering staff and factory members who have previously worked with him. Installations of the latest type will be used in the plant.

BERG

LOHOCLA

188 proof Completely Denatured Alcohol for use as an *ANTI-FREEZE* in automobiles. Our distributors and warehouses at strategic points throughout the country assure prompt delivery "when you want it".

DAVID BERG INDUSTRIAL ALCOHOL CO.
Philadelphia, Pa.

New York Warehouse — 527 Hudson Street

DISTRIBUTORS

M. J. Daly & Co. 605 Gerke Bldg. Cincinnati, Ohio	J. Rosenfield P.O. Box 424 Lancaster, Pa.	A. H. Selling 527 Hudson St, New York City	Chas. A. Webb & Co. 514 S. Eutaw St. Baltimore, Md.
J. C. Drouillard Co. Kirby Bldg. Cleveland, Ohio	Rolls Chemical Co. 483 Ellicott Sq. Bldg. Buffalo, N. Y.	N.S.Wilson & Sons, Inc., 74 W. 2 St. Boston, Mass.	E.E. Zimmerman Co. Bessemer Bldg. Pittsburgh, Pa.
August Hoffman Majestic Bldg. Indianapolis, Ind.	H. H. Reed 549 W. Washington St. Chicago, Ill.	W. P. Williams Co. 218 Ellsworth Ave. Grand Rapids, Mich.	Morley Bros. West End of Dodge Ave. Detroit, Mich.

Outfit of C. A. Benner mounted on trailer.

Paasche outfits keep busy

PAASCHE equipment's easy portability makes it the logical outfit for painting oil tanks, whether grouped together on a farm or strung out miles apart.

One Paasche user writes us, "My outfit is kept busy on big oil tanks. I set it up on a trailer when I am moving from place to place and *no time is lost.* The boy and I sprayed a 55,000-bbl. tank, roof and all, in 7 hours and 40 minutes. This tank is about 100 feet in diameter and 40 feet high. I couldn't handle this line with the old antiquated brush method."

Owners of Paasche Portable Outfits are saving $2.00 to $3.00 on every gallon of paint they apply. If you think such savings worth while, write us for details.

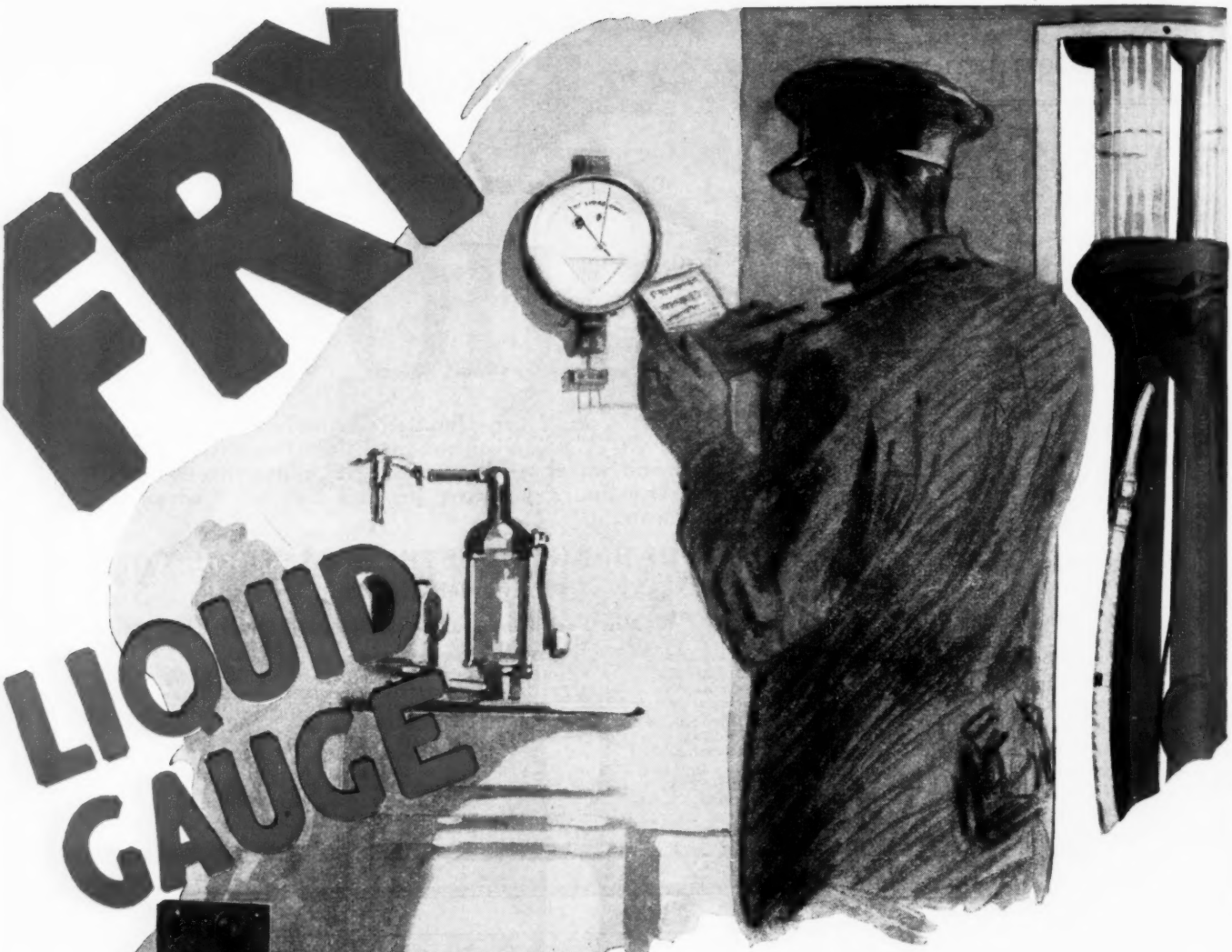
New York, N. Y.
Cleveland, Ohio
Seattle, Wash.
Philadelphia, Pa.
Davenport, Iowa

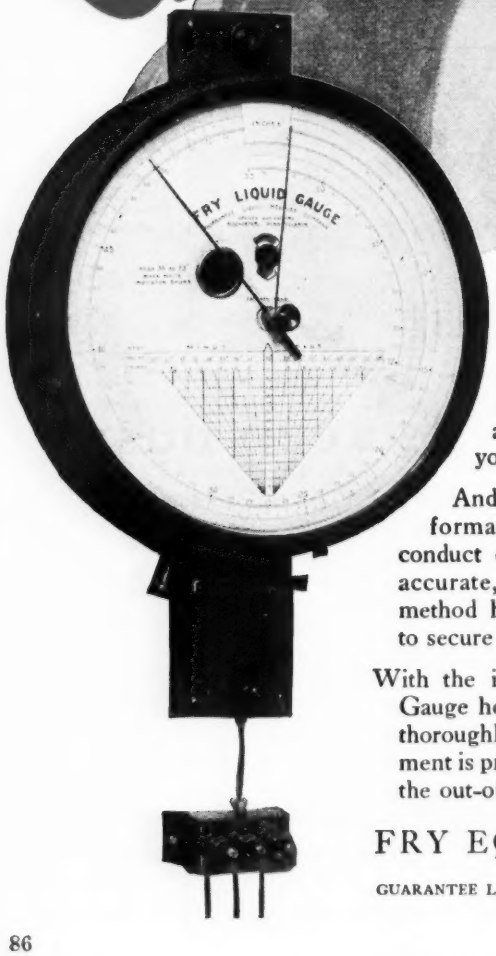
Paasche Airbrush Co.
1925 DIVERSEY PARKWAY, CHICAGO, ILL.

Los Angeles, Calif.
Denver, Colo.
San Francisco, Calif.
Pittsburgh, Pa.
Detroit, Mich.

NPN8-31-Gray

FRY LIQUID GAUGE





For the First Time

A Scientifically Accurate Storage-Tank Gauge

Do you know with any degree of accuracy how much gasoline you have in your tanks now?—how much yesterday?—or how much you will have when they are filled tomorrow? Of course you do *not!*

And in spite of the fact that this information is basic and vital to the conduct of your business, no positively accurate, simple, convenient and safe method has been available up *until now* to secure this data.

With the introduction of the Fry Liquid Gauge however, an absolutely scientific, thoroughly dependable method of measurement is provided—relegating into the past the out-of-date gauge-stick system.

The Fry Liquid Gauge is simple in construction, easily installed and will work year in and year out without attention.

The Fry Liquid Gauge may be used to take the readings of several tanks—all from the one central location.

Thus by enabling you to keep a deadly accurate check on your in and out transactions, and to maintain an accurate inventory at all times, the Fry Liquid Gauge will prove itself an accountant without pay in your business and repay its original cost to you over and over again.

Here is a greater invention than the cash register—and just as accurate.

Write and let us explain the many further exclusive and money saving features of this invaluable and ingenious Liquid Gauge.

FRY EQUIPMENT CORPORATION, ROCHESTER, PA.

Successors to

GUARANTEE LIQUID MEASURE COMPANY, ROCHESTER, PA. MARVEL EQUIPMENT COMPANY, CLEVELAND, OHIO

FRY EQUIPMENT COMPANY OF CANADA, LTD., TORONTO, CANADA

New Patents

Aug. 9, 1927

Method of Treating Hydrocarbons.—Alexander B. Way, Lynn, Mass., assignor to Lewis A. Way, Pittsburgh, Pa. Filed March 19, 1924. No. 1,638,021.

Material for the Treatment of Hydrocarbons.—Alexander B. Way, Lynn, Mass., assignor to Lewis A. Way, Pittsburgh, Pa. Filed March 19, 1924. No. 1,638,022.

Process for Recovering Vanadium from Petroleum Hydrocarbons.—Alfred Oberle, Kansas City, Mo., assignor of one-half to Thomas E. Scofield, Kansas City, Mo. Filed Sept. 8, 1925. No. 1,638,057.

Process for Cracking Oil.—Gustav Egloff, Independence, Kans., assignor to Universal Oil Products Co., Chicago, Ill. Filed Dec. 20, 1920. No. 1,638,093.

Process of Treating Hydrocarbons.—Carbon P. Dubbs, Wilmette, Ill., assignor to Universal Oil Products Co., Chicago, Ill. Filed Sept. 29, 1919. No. 1,638,112.

Process for Cracking Oils.—Carbon P. Dubbs, Wilmette, Ill., assignor to Universal Oil Products Co. Filed Feb. 17, 1921. No. 1,638,113.

Process of and Apparatus for Cracking Oil.—Gustav Egloss, Chicago, Ill., assignor to Universal Oil Products Co., Chicago, Ill. Filed Dec. 13, 1920. No. 1,638,115.

Apparatus for Cracking Hydrocarbons.—Gustav Egloff and Joseph C. Alther, Chicago, Ill., assignors to Universal Oil Products Co., Chicago, Ill. Filed Dec. 23, 1920. No. 1,638,116.

Fluid Fuel and Method of Producing the Same.—Edwin J. Barth and Frank Hovell, San Antonio, Tex. Filed March 25, 1927. No. 1,638,314.

Method of and Apparatus for Cracking Oil.—Francis M. Hess, Whiting, Ind. Filed Jan 24, 1923. No. 1,638,335.

Medium for Treating Oils and Method of Making the Same.—Hans Schlosstein, Chicago, Ill. Filed Feb. 25, 1927. No. 1,638,643.

Medium for Treating Oils and Method of Making the Same.—Hans Schlosstein, Chicago, Ill. Filed April 21, 1927. No. 1,638,644.

Method of Hydrocarbon Oil Conversion.—Lyman C. Huff, Chicago, Ill., assignor to Universal Oil Products Co., Chicago, Ill. Filed Nov. 18, 1925. No. 1,638,735.

Production

Shock Absorber for Oil-Well Pump Rods.—William F. Reschke, Wichita, Kans. Filed June 15, 1925. No. 1,638,213.

Soft-Formation Well Drill.—Harold W. Fletcher, Houston, Tex., assignor to Hughes Tool Co., Houston, Tex. Filed April 10, 1924. No. 1,638,253.

Rotary Well Drill.—Edward S. Hutton, Muskogee, Okla. Filed May 25, 1925. No. 1,638,337.

Pipe Tongs.—Samuel T. Smith, Los Angeles, Calif. Filed Nov. 19, 1925. No. 1,638,371.

Casing Puller and Cutter.—Rush C. Lewis and Frank S. Harris, Abilene, Tex. Filed Feb. 11, 1925. No. 1,638,494.

Torpedo Hook.—Oscar Bond, Sapulpa, Okla. Filed Jan. 23, 1926. No. 1,638,678.

Natural Gasoline

Gas Apparatus.—George O. Curme, Jr., and Harold E. Thompson, Clendenin, W. Va., assignors to Carbide and Carbon Chemicals Corp. Filed June 15, 1922. No. 1,638,434.

Liquid and Gas Contact Apparatus.—Frederick H. Wagner, Baltimore, Md., assignor to The Bartlett Hayward Co., Baltimore, Md. Filed June 17, 1925. No. 1,638,670.

Reduction Process Using Circulating Reducing Gases.—Emil Edwin, Trondhjem, Norway, assignor to Aktieselskapet Norsk Staal Elektrisk-Gas-Reduktion, Oslo, Norway. Filed Oct. 15, 1925. No. 1,638,684.

Carbon-Black-Producing Apparatus.—Clyde A. Barbour, Jr., Monroe, La. Filed June 11, 1926. No. 1,638,722.

Miscellaneous

Continuous Battery Oil Filter.—Henry A. Hills, Grand Rapids, Mich. Filed April 26, 1922. No. 1,638,201.

Retort for Treating Oil Shale.—Edward H. Roth, St. Louis, Mo. Filed Dec. 19, 1924. No. 1,638,217.

Coupling Loosener.—Floyd L. Scott, Houston Tex., assignor to Hughes Tool Co., Houston, Tex. Filed May 25, 1922. No. 1,638,219.

Oil-Diluent Separator.—Southwick W. Briggs, Glenmont, Md. Filed Nov. 4, 1926. No. 1,638,319.

Removing Oil from Oil-Bearing Materials.—William Hoskins, Chicago, Ill. Filed March 1, 1922. No. 1,638,530.

"THERE'S SOMEONE IN THE STORE, PA."

REMEMBER the old time merchant? He lived in rooms adjoining his store and when the tinkling of a bell signalled the entrance of a customer, he left his meal and came out to wait on the customer. His cash register was his pocketbook — deliveries were on foot — everything slow and inaccurate.

It's different today. Cash registers—telephone—delivery truck—packaged goods. Modern accurate methods to give the buying public quick service.

The motorist is always in a hurry. He doesn't like delays. In his habitual hurry he is likely to neglect his motor oil unless you can serve him *quick*.

Oil is your biggest profit maker. Speedy service will increase your gallonage and make your profits grow. Rhodes Prefilled Dispensers tell the motorist that he will get quick service at your station.

The transparent glass of the Rhodes Dispensers shows the oil in its true color. The motorist sees what he gets and gets all he sees. Attractively arranged on Rhodes Display Stands near your gas pumps they are constant reminders to "look at the oil."

Equip your station with these modern business builders. Today.

JAY B. RHODES COMPANY
Kalamazoo Michigan

RHODES PRE-FILLED OIL DISPENSERS

Rhodes Dispensers are speedy pouring, clearly transparent, accurate measures. They will help you boost your sales on your most profitable product—Oil

LUCID LINE

Transparent Cup and Gun Grease

190° F Melting Point *No Solid Point*

The latest and the extreme development in Lubrication.

Ask for Samples.

LUCID CUP GREASE
LUCID GUN GREASE
VERSA-LITE

The best Chatterless Base in the world.
Our goods protect you on past and future infringement interference.

A. J. Stevens Grease & Oil Company
KANSAS CITY, MISSOURI

A Heil Semi-elliptical 3 compartment tank with steel drop panel can racks and integral can box, mounted on a White truck Model 51.

HEIL TANKS for SPEED TRUCKS

Oil Companies are constantly specifying new types of equipment that will increase the gallonage per truck unit delivery. Good roads, pneumatic tires, bus chassis, and light duty speed trucks have all helped the oil man to cut down the delivery cost per gallon.

And now Heil engineers have contributed a real service to the oil jobber in designing Heil Quality Tanks to conform to these new standards of performance. Heil compartment truck tanks are cushioned on light, sturdy, all-steel or wood-filled subframes which make possible increased tank gallonage. There is no unnecessary dead weight in a Heil tank unit—the payload is increased.

Another Heil 3 compartment semi-elliptical tank on a 1½ ton, 137" wheelbase Graham truck.

Quick, economical "delivery" of gasoline, lubricating and fuel oils requires more than rapid truck transportation. Rapid loading and unloading must also be possible. Heil facilities for rapid, safe unloading permit Heil-equipped trucks to be on the road the maximum length of time. Speed in loading—transportation—and unloading.

Heil Tanks provide: Piping of the correct size and installation, unit or individual control of emergency valves, rapidly and easily operated Heil Lift-Lock Bumper Bar, 6" filler plugs, and the Heil Full-Flow Air Vents. Tests have shown that the Heil Full-Flow Air Vents permit as rapid unloading as though the filler plugs themselves were removed.

1238-50 26th Avenue **THE HEIL CO.** **Milwaukee, Wisconsin**

Manufacturers of compartment truck tanks, fuel oil tank pumpers, bulk storage and underground storage tanks, distributed by:—

The Heil Co., New York
The Heil Co., Philadelphia
The Heil Co., Boston
The Heil Co., Chicago
The Heil Co., Cleveland
The Heil Co., Detroit
Heil Northwestern Sales Co., St. Paul
Wilson Oil Equip. Co., Tampa
Maryland Track Equipment Co., Baltimore
Modern Vehicle Co., San Francisco
Bacon-Matheson Forge Co., Seattle
General Auto Truck Co., Washington
Kranz Automotive Body Co., St. Louis
Mayer Body Corp., Pittsburgh
Shop of Siebert, Toledo
James J. Conway, Lansing
Martin & Schwartz, Buffalo
Smith-Moore Vehicle Co., Richmond
H. O. Clapp, Syracuse
Wilson Machinery Co., Denver

HEIL TANKS

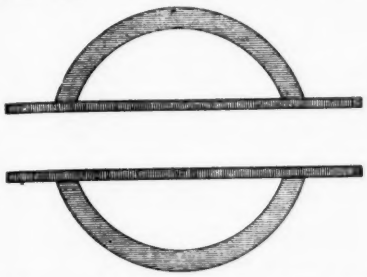
Oil Trademarks for Copyright

The following are trademark applications pertinent to our field pending in the United States Patent office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister Building, Washington, D. C., trade-mark specialists.

As an additional service feature to its readers, this journal gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering. You may communicate with the Editor of this Department, or send your inquiry direct to the National Trade-Mark Company, stating that you are a reader of this journal.

Ser. No. 246,717. (CLASS 15. OILS AND GREASES.) STANDARD OIL COMPANY (NEW JERSEY), Bayonne, N. J. Filed Mar. 31, 1927.

The drawing is lined to indicate the colors red and blue.



Particular description of goods.—Refined, Semirefined, and Unrefined Oils Made From Petroleum Both with and without Admixture of Animal, Vegetable, or Mineral Substances for Illuminating, Burning, Power, Solvent, Fuel, and Lubricating Purposes, and Lubricating Greases.

Claims use since Jan. 14, 1925.

Ser. No. 247,973. (CLASS 15. OILS AND GREASES.) ABRAHAM FROM, doing business as Allstates Oil & Supply Co., South Bend, Ind. Filed Apr. 7, 1927.

The words "Motor Oil" are disclaimed apart from the mark shown in the drawing.

Particular description of goods.—Lubricating Oils.

Claims use since Jan. 15, 1927.

Ser. No. 243,584. (CLASS 15. OILS AND GREASES.) BLACKHAWK PETROLEUM CO., Chicago, Ill. Filed Jan. 31, 1927.

BLACKHAWK

Particular description of goods.—Lubricating Oils and Greases.

Claims use since Mar. 1, 1925.

ST. CLOUD, Minn.—Clifford Stehnig, for the past year local manager for the Standard Oil company, has resigned his position and is going to California. He is succeeded as manager here by Ed. Wilson of Glenwood who has been with the Standard Oil company for the past six years.

KANOTEX

—he's worth listening to!

Don't think that the Kanotex Salesman is interested only in getting you to change to the Kanotex Line. His interest goes much deeper than that. Of course, he wants your business—we all want to grow—but he also wants to help YOU.

The Kanotex Representative is "chuck full" of good ideas. He is a real merchandiser of petroleum products. He knows your problems and can help you solve them.

Get better acquainted with him. The next time he calls on you, open up on him. Ask his advice. You'll find his suggestions worth many dollars to you.

Of course, if you've made up your mind to join our happy family since his last call, we'll welcome your order for that trial car, either by mail, wire or phone.

THE KANOTEX REFINING COMPANY

Phone L. D. No. 4

Arkansas City, Kansas

RELIABILITY COMES FIRST

Year after year, users of Niagara Oil or Gasoline Meters depend on them for reliable measurement of petroleum products in any quantity. Their accuracy is constant---the meters are simple and trouble proof---installation is easy. Write us for catalog.

NIAGARA OIL METERS

Built Since 1892 By

BUFFALO METER COMPANY

2889 Main Street :-: :-: **Buffalo, N. Y.**

"Best Compressor Ever Used"
Say These Attendants

NORTH STAR OIL AND REFINING COMPANY
LIMITED
REFINERS AND DISTRIBUTORS
PETROLEUM PRODUCTS
REFINERY ST. BONIFACE, MANITOBA
HEAD OFFICE WINNIPEG, MANITOBA

WINNIPEG
CANADA

April 14th, 192 .

Milwaukee Tank Works,
Milwaukee, Wis.

ATTENTION - Mr. A. J. Heilman

Dear Sir:-

Replying to yours of April 7th, we have four filling stations here equipped with the Milwaukee Compressor and each one of our attendants claim it is the best Compressor they have ever used. One particular point in its favor is that it stands our severe Winter climate without requiring any adjusting whatever.

Yours very truly,

NORTH STAR OIL & REFINING CO. Limited.

F. W. Dell
General Sales Manager.

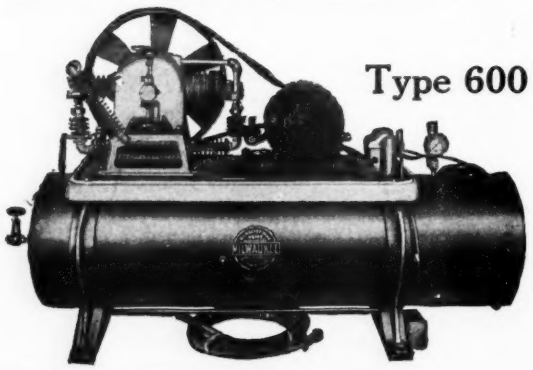
FWD:VS.

Built a Little Better

This Letter Proves It Pays

Stands Severe Winter Climate REQUIRING NO ADJUSTMENT WHATEVER

Write today for complete catalog of compressors, visible and piston pumps, etc. A fine popular priced line.



Type 600

MILWAUKEE TANK WORKS, Milwaukee, Wis.

MILWAUKEE TANK WORKS

F O U N D E D 1 9 1 1

KEROSENE

All Gravities · Water White

TRACTOR FUEL

WILLOCK OIL CORPORATION

First National Bank Building · Phone Atlantic 3110

PITTSBURGH, PA.

52 Years Experience · It Counts

New Stations Built or Being Built

Collingswood, N. J.—Mrs. Gertrude Howell seeks permit for filling station.

Lebanon, Ind.—Horton Oil Refining Co. is building filling station.

Austin, Tex.—L. G. Bennette will erect service station.

Mechanicsburg, O.—Emma L. Overs, of Bowlusville, has purchased property for filling station.

Hopkins, Mo.—Edward Turner and Lawrence Wiley erecting filling station.

Fond du Lac, Wis.—Standard Oil Co. of Indiana is completing service station.

Reynoldsburg, O.—Frank Settler, of Obetz, O., purchased property for filling station.

New Holland, O.—Louisiana Oil Refining Corp. will erect filling station.

Barnwell, S. C.—Gulf Refining Co. is completing service station.

Camden, O.—Ed. Anderson completing filling station.

Cambridge, O.—Standard Oil Co. of Ohio will build service station.

Faribault, Minn.—John Wunderlich will erect filling station.

Wellington, O.—Paul Ronk is erecting service station.

Howells, Neb.—Bert Fowler will build filling station.

Wapakoneta, O.—Roxana Petroleum Corp. is completing service station.

Bellaire, O.—Standard Oil Co. of Ohio is building service station.

Columbia, S. C.—C. Wilmot Brown will erect service station.

Savannah, Ga.—Fred J. Howden seeks permit for filling station.

Coshocton, O.—A. O. Hale is building superservice station.

Hurley, Wis.—Supreme Oil Co., recently organized with headquarters here, is completing a filling station here, and one at Ironwood, Mich. The company plans to build 10 filling stations, five to be built this year. Officers are: Joseph Francis, president; Frank Stella, vice president; Frank Gentile, treasurer; and Joseph Gentile, secretray.

Foreign Opportunities

Reserved information may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, and its district and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

26928.—**Bunker oil,** London, England, agency.

26930.—**Gasoline, benzine, benzol, and other fuel oils,** Hamburg, Germany, agency.

26931.—**Lubricating oils,** Copenhagen, Denmark, agency.

26851.—**Lubricating oils and greases,** Victoria, Brazil, agency and purchase.

26857.—**Paraffin wax,** Hamburg Germany, agency.

26861.—**Hard asphalt and petroleum pitch,** Vienna, Austria, agency.

ON THE LAZY BENCH

National Petroleum News

Goodbye, Forever

There was a young man, an Ipswichan,
Who cleaned his pants in the kitchen;
He used gasoline,
That's the last that was seen
Of the man, his pants or the kitchen.

—*Pure Oil News*

* * *

"Yessuh. Ah shuah was a sick man," the darky chauffeur assured his boss when he returned to work. "De doctah say Ah had a case ob acute indiscretion."—*Skelly News.*

* * *

"I hope, dear," said the bride of the traveling salesman, "that you'll think of me every day while you're gone."

"Yes, dear, I will," responded hubby absently. "I'll make a memorandum of it."—*Flash Points.*

* * *

Salesgirl (at greeting card counter): "Here's a lovely sentiment, sir: 'To the only girl I ever loved.'"

Customer: "That's the stuff! gimme a dozen of those."—*Skelly News.*

* * *

C. R. Maxey of the pipeline division of the Pure Oil Co., at Smiths Bluff, Texas, is responsible for this one: A woman telephoned and asked for the dairy department. When informed there was none she argued that she knew better because her husband worked in the bull gang.

—*Pure Oil News*

* * *

"Sir," wrote the indignant mother to the schoolmaster, "you mustn't whack my Tommy. He isn't used to it. We never hit him at home except in self-defense."—*Skelly News.*

* * *

Lady (to tramp): "It must be very demoralizing going about the country begging. Don't you ever wish for something better?"

Tramp: "Yes, mum, I'd like to do it in a motor."—*Skelly News.*

* * *

"There are just two things that break up most of the happy homes nowadays."

"What are they?"

"Woman's love for dry goods and man's love for wet goods."—*Skelly News.*

* * *

"I thought you were working on Jack Ryan's new house," said a house painter's friend.

"I was going to," replied the painter, "but I had a quarrel with him and he said he'd put the paint on himself."

"And did he do it?"

"Yes; that is where he put most of it."—*Skelly News.*

* * *

"Get in the country," said the doctor, "long walks in the open air. No alcohol in any form, and one cigar a day."

"But—Doctor—"

"One cigar a day!" reiterated the doctor firmly.

Six weeks later the patient returned to town.

"How do you feel?" asked the doctor.

"Splendid! Fit as a fiddle!"

"And you liked it all?"

"Yes; everything except that one cigar."

The doctor smiled. "The tobacco habit, my dear sir—"

"Isn't any joke," put in the patient ruefully. "It's hard on a man at my age to take up smoking!"—*Skelly News.*

* * *

"My gal saw a mouse yesterday," announced Cactus Joe. She's powerful afeared of them."

"What did she do?" asked Hashknife Pete.

"Picked up a rattlesnake and whipped it to death."—*Skelly News.*

* * *

Policeman (producing note-book): "What's your name?"

Motorist: "Aloysius—Alastair—Cyprian—Cholmondeley."

Policeman (starting to write, then hesitating and putting book away): "Well, don't let me catch you again."—*The Naft.*

* * *

The Motor Salesman (teaching her to drive): "In case of emergency the first thing you want to do is to put on the brake."

She: "Why, I thought it came with the car!"—*The Naft.*

* * *

Two women were passing a butcher's shop where a pig's head was on display, with a lemon in its mouth.

"There, Liz," exclaimed one of the women, "that reminds me that I promised to get a new pipe for Joe."—*Flash Points.*

* * *

"You have decided to conduct your next campaign without the use of money?"

"It appears," answered Senator Corntassle, "that I shall be obliged to do so. All the financial backing is going to the aviators instead of the politicians."—*Skelly News.*

Special Muleskin Folio

Your Name in Gold FREE

Complete Net $7.50

362K—Special made folio from heavy double weight muleskin in handsome shark grain. Has three pockets, heavy leather straps and handle, good lock, bottom reinforced with steel studs. Inner case contains six 4-oz. bottles, partitioned separately, lined with red velvet. Metal capped corks furnished. Case also contains five grease jars.

Other styles in our FREE Catalog

L-U-C-E

Builders of Sales Luggage

514 Delaware, Kansas City, Mo.

The
NATIONAL REFINING COMPANY
PETROLEUM PRODUCTS

THREE MODERN REFINERIES:
Marietta, Ohio Refinery
operated on Pennsylvania Crude
Findlay, Ohio Refinery
operated on Ohio Crude
Coffeyville, Kansas Refinery
operated on Midcontinent Crude

National Headquarters
NATIONAL BLDG., CLEVELAND, O.

"We Are Sorry—But

That is what we may have to tell yo with the Engineering Numbe

YOU are going to want extra copies of the Engineering Number of National Petroleum News, either for yourself or for men in your organization.

When oil men, with problems just like yours, tell how they have solved those problems and show pictures and drawings to help you solve *your* problems—you and all the men under you can profit by having handy at all times for reference, a copy of that issue of National Petroleum News that tells "how to do it and what to do it with".

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The Engineering Numbe

Out September Twenty-One

Refinery - Tank Wagon Markets

National Petroleum News

Cool Weather Blamed for Slackening Gasoline Demand in Mid-Continent

Staff Special
TULSA, Aug. 27

PURCHASE of approximately 1,000,000 gallons of high gravity gasolines for export, better inquiries for kerosenes, a reduction by several Oklahoma refiners of 0.25-cent a gallon on gasoline quotations, a crude oil price cut in the Panhandle and west Texas fields and cheaper spot crude oil in north Texas, were the dominantly new factors in the Mid-Continent refinery market situation this week, and none of them was of sufficient importance to change materially the picture as a whole.

The export buying was by Atlantic Refining Co. Four north Texas refiners got the orders. Two of them accepted orders for approximately 500,000 gallons of 64-66, 390 e.p. gasoline at 6.50 cents a gallon, and the other two took approximately the same volume of 64-66, 375 e.p. gasoline at 6.625 cents.

Reduction by the Humble Oil & Refining Co. of its posted price for Panhandle and west Texas crude apparently had little effect in the Mid-Continent unless it was partly the cause of cheaper crude in north Texas. Reports from there indicate that refiners now can buy high gravity crude at the posted price whereas for some time past they have had to pay a premium on the spot market. Low gravity crude has been offered at 8.5 cents a barrel under the posted price.

REPORTS today indicate that a few of the North Texas refiners were curtailing their crude runs considerably with the resultant freer offering of spot crude.

Several Oklahoma refiners who last Saturday were quoting 6.50 cents for 58-60 U. S. Motor gasoline reduced their quotations to 6.25 cents Monday morning, with a reduction of 0.25 cent also on other grades. Orders the first of the week were somewhat better but toward the end movement had slackened. Jobbers apparently have formed the habit by their hand-to-mouth buying policy of estimating their requirements late one week for the following week and either writing or wiring their refinery connections so the orders reach the offices Monday or Tuesday.

Weather is being blamed by a majority for the relatively quiet gasoline demand for this season. The assistant salesmanager of an Oklahoma refinery returned this week from a trip through a part of the Standard of Indiana territory and reported that he found that in towns where there had been no material change in the number of service stations the gallonage this August was only 80 to 90 per cent of the gallonage for August last year. He said that in many towns a fire in the evening was comfortable. Such weather may be ideal for touring in the daytime, but it certainly doesn't encourage after dinner driving just to cool off before bedtime.

IN SOME quarters the expression was heard that refiners would be able to show but little gain in business this month as compared with the same period a year ago. A comparison of shipments of gasoline from Aug. 1 to 15 this year from 124 Mid-Continent refiners reporting weekly operations figures to NATIONAL PETROLEUM NEWS with the total for the same period in 1926 shows an increase for the 15 days of 3,717,000 gallons.

Domestic demand for high gravity gasolines has picked up slightly this week as jobbers in the far northern territory are preparing for their winter trade. Refiners who make a 64-66 437 e.p. blend by using their U. S. Motor and natural gasoline have been forced to raise their prices slightly as a result of the strong natural gasoline market, but the straight run high gravities have shown no tendency to move from their present proximity to U. S. Motor.

Grade BB natural gasoline has received a good play this week as a result of the comparatively strong market and higher prices for Grades A and AA. Demand for BB has caused prices to advance approximately 0.25 cent. Inquiries were numerous late in the week for doctor test BB, with several sales reported at 5.75 cents. Doctor test Grade AA meanwhile has been bringing 6.15 cents, with the sour goods moving mostly at 6 to 6.125 cents. Odd cars were reported moved at 5.875 cents, but they were not numerous enough to represent the going market.

THERE is much speculation as to the future demand for natural gasoline. It is a well known fact that at present the bulk of Grade AA has been moved south to be used in bringing up the gravity of gasoline made by Gulf Coast refiners, who incidentally have been taking most of the export business so far this year. If they continue to get in on most of the export buying from the Gulf natural gasoline manufacturers feel that they will enjoy a brisk demand this fall. Prices will have to be higher at the Gulf, however, before the Mid-Continent refiners can hope to get any sizeable export business, and their natural gasoline requirements therefore will be limited to bringing up the gravity of their domestic gasolines.

A north Louisiana refiner early this week reported he had booked an export order for kerosene, but the amount and price were not revealed. An Oklahoma-Texas refiner who last week sold a quantity of kerosene for export, goods to move out of his Fort Worth plant, reported another export inquiry this week but no sale had been made up to today. Domestic demand for kerosene meanwhile has improved, jobbers apparently anticipating the usual September flurry in buying when prices generally move up.

A NORTH Texas marketer said today that kerosene was stronger in that territory. He had been trying to buy some 41-43 w.w. at 3.625 cents and had been unable to get a price under 3.75 cents.

Several north Texas refiners report they have had a good demand recently on 32-36 gas oil, the goods moving to industrial users in the northern states. Oklahoma refiners

JENKINS CRACKING PROCESS

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Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

PENNSYLVANIA	Prices Aug. 29	Prices Aug. 22	Prices Aug. 15
52-54 Naphtha	8.50 – 8.75	8.75 – 9.00	8.75 – 9.00
54-56 Naphtha	8.50 – 9.00	8.75 – 9.00	8.75 – 9.00
58-60 Gasoline	8.50 – 8.75	8.75 – 9.00	8.75 – 9.00
60-62 Str.-run gasoline	9.00 – 9.50	9.25 – 9.75	9.25 – 9.75
64-66 Str.-run gasoline	9.50 –10.50	9.75 –10.50	9.75 –10.50
68-70 Str-run gas. 350-360 e.p.	10.25 –10.75	10.25 –10.75	10.25 –10.75
OKLAHOMA			
48-50 450 e.p. naphtha	6.00 – 6.25	6.00 – 6.25	6.25
50-52 450 e.p. naphtha	6.00 – 6.25	6.00 – 6.25	6.25
56-58 450 e.p. gasoline	6.00 – 6.50	6.00 – 6.50	6.25 – 6.50
58-60 450 e.p. gasoline	6.00 – 6.50	6.00 – 6.50	6.25 – 6.50
56-58 U. S. Motor, 437 e.p.	*6.00 – 6.25	*6.125– 6.50	6.25 – 6.50
58-60 U. S. Motor, 437 e.p.	6.25 – 6.50	6.25 – 6.50	6.50
60-62 437 e.p. gasoline	6.25 – 6.75	6.375– 6.75	6.50 – 6.75
60-62 400 e.p. gasoline	**6.50 – 7.00	**6.50 – 7.00	**6.50 – 7.00
64-66 390 e.p. gasoline	**6.75 – 7.25	**6.75 – 7.25	**6.75 – 7.25
64-66 375 e.p. gasoline	**6.75 – 7.25	**6.75 – 7.25	**7.00 – 7.75
68-70 350-360 e.p. gasoline	**7.25 – 7.50	**7.25 – 7.50	**7.50
KANSAS* (F. O. B. refinery Kansas destination)			
58-60 U. S. Motor 437 e.p.	6.25 – 6.75	6.75	6.75 – 7.00
60-62 400 e.p. gasoline	7.00	7.00 – 7.25	7.25
64-66 375 e.p. gasoline	7.25	7.25 – 7.50	7.50
NORTH TEXAS			
48-52 450 e.p. naphtha	†6.00	†6.00	†6.00
56-58 450 e.p. gasoline	5.875	6.00	6.00
58-60 450 e.p. gasoline	5.875	6.00	6.00
58-60 U. S. Motor 437 e.p.	6.00	6.125	6.125– 6.25
60-62 400 e.p. gasoline	6.25 – 6.50	6.25 – 6.375	6.50 – 6.625
64-66 390 e.p. gasoline	6.50	6.50	6.625
64-66 375 e.p. gasoline	6.625	6.75	6.75
68-70 350-360 e.p. gasoline	*7.00 – 7.25	*7.25	*7.25
NORTH LOUISIANA (For Louisiana and differential territory destination)			
56-58 U. S. Motor gasoline	6.25 – 6.50	6.50 – 6.75	6.75 – 7.00
ARKANSAS (For Arkansas intrastate shipment)			
56-58 450 e.p. gasoline	6.25	6.25	6.50
58-60 450 e.p. gasoline	6.25	6.25	6.625
58-60 U. S. Motor 437 e.p.	6.50 – 6.75	6.50 – 6.75	6.75 – 7.00
ARKANSAS (F. O. B. Arkansas refineries for interstate shipment)			
58-60 U. S. Motor 437 e.p.	**6.25 – 6.75	**6.25 – 6.75	6.625– 6.875
CALIFORNIA			
*54-58 U.S. Motor 437 e.p.	7.25 – 8.50	7.50 – 8.50	7.25 – 8.50
*58-61 U.S. Motor 437 e.p.	8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
*42-45 Eng. dis. 445-480 e.p.	6.50 – 7.00	6.50 – 7.00	7.00 – 7.50

*2c tax to be added if used in state.

NEW ENGLAND

"These prices have been discontinued in this table and will appear hereafter in the Seaboard market for Boston."

NATURAL GASOLINE

(Note: End point of all grades, not over 375° F.)

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
Grade A, 72-79.9, 90% Recovery	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
Grade BB, 84-92, 85% Recovery	5.50 – 5.75	5.375– 5.50	5.25 – 5.50
Grade B, 76-83.9, 85% Recovery	5.50 – 5.75	5.375– 5.50	5.25 – 5.50
Grade C, 80-90, 78% Recovery	5.375– 5.625	5.375	**5.00 – 5.25
NORTH TEXAS (F. O. B. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
Grade A, 72-79.9, 90% Recovery	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
Grade BB, 84-92, 85% Recovery	5.50 – 5.75	5.375– 5.50	5.25 – 5.50
Grade B, 76-83.9, 85% Recovery	5.50 – 5.75	5.375– 5.50	5.25 – 5.50
Grade C, 80-90, 78% Recovery	5.375– 5.625	5.375	†5.00 – 5.25
NORTH LOUISIANA (F. O. B. Monroe District)			
Grade AA	†6.25	†6.25	†6.25
Grade BB	†6.00	†6.00	†6.00
Grade C	†6.00	†5.75	†5.75
CALIFORNIA			
75-85, 375-390 e.p. blend	7.50 –10.00	7.50 –10.00	7.5 –10.00

MOTOR FUEL BLENDS

PENNSYLVANIA			
68-70 Blend 437 e.p.	Prices	.....	.....
64-66 Blend 437 e.p.	Temporarily	.....	.....
60-62 Blend 437 e.p.	discontinued	.....	.....
OKLAHOMA			
64-66 Blend 437 e.p.	6.00 – 6.25	6.00 – 6.125	6.25

BURNING OILS

PENNSYLVANIA			
45 w.w. kerosene	5.75 – 6.00	5.875– 6.00	5.75 – 6.00
46 w.w. kerosene	6.00 – 6.50	6.25 – 6.50	6.25 – 6.50
47 w.w. kerosene	6.50 – 7.00	6.75 – 7.00	6.75 – 7.00
OKLAHOMA			
41-43 w.w. kerosene	4.00 – 4.25	4.00 – 4.25	4.00 – 4.25
42-44 w.w. kerosene	4.375– 4.50	4.375– 4.50	4.375– 4.50
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene	4.75 – 5.25	5.25	5.25
42-44 w.w. kerosene	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
NORTH TEXAS			
40-42 w.w. kerosene	3.50 – 3.625	3.50 – 3.625	†3.75
41-43 w.w. kerosene	3.75	3.625– 3.75	3.75
NORTH LOUISIANA (For Louisiana and differential territory destination)			
41-43 w w. kerosene	4.25	4.00 – 4.25	†4.125– 4.375
ARKANSAS (For intrastate shipment only)			
41-43 w.w. kerosene	4.125	4.125	4.125
42-44 w.w. kerosene	4.50	4.50	4.50
ARKANSAS (F. O. B. Arkansas refineries for interstate shipment)			
41-43 w.w. kerosene	4.00 – 4.125	4.00 – 4.125	4.00 – 4.125
42-44 w.w. kerosene	4.25 – 4.375	4.25 – 4.375	4.25 – 4.375
CALIFORNIA			
38-40 w.w. kerosene	5.00 – 5.50	5.00 – 5.50	5.00 – 5.50

NEW ENGLAND

"These prices have been discontinued in this table and will appear hereafter in the Seaboard market for Boston."

NEUTRAL OIL

PENNSYLVANIA			
Vis.	(Viscosity at 70°F.)		
200 No. 3 Assoc. Filt.	34.50 –35.00	34.50 –35.00	34.50 –35.00
180 No. 3 Assoc. Filt.	31.00 –32.00	31.00 –32.00	31.00 –32.00
150 No. 3 Assoc. Filt.	27.50 –28.50	27.50 –28.50	27.50 –28.50
	(Non Viscous)		
34 Grav. 330-340 Flash	7.00 – 7.50	7.00 – 7.75	7.00 – 7.75
36 Min. Neut. 300-305 Flash	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00
OKLAHOMA			
Vis. Color	(Viscosity at 100°F.)		
100—No. 2	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
150—No. 3	8.50	8.50	8.50
150—No. 4	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
180—No. 3	9.00 –10.00	9.00 –10.00	9.00 –10.00
180—No. 4	9.75	9.75	9.75
180—No. 5	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
200—No. 3	9.50 –11.00	9.50 –10.50	10.00 –11.00
200—No. 4	10.50 –10.75	10.50 –10.75	10.50 –10.75
200—No. 5	9.00 –10.50	9.00 –10.00	9.00 –10.00
220—No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220—No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240—No. 3	14.00	14.00 –15.00	14.00 –15.00
240—No. 4	13.50	13.50	13.50
240—No. 5	12.00 –13.00	12.00 –13.00	12.00 –13.00
280—No. 3	16.00 –17.00	16.00 –17.00	16.00 –17.00
280—No. 4	15.25	15.25	15.25
280—No. 5	14.00 –15.00	14.00 –15.00	14.00–15.00
300—No. 5-6	17.00	17.00	17.00
GULF COASTAL			
Vis. Color	(Viscosity at 100° F., pour test 0)		
100—No. 2 Unfilt. Pale	7.50 – 8.00	7.00 – 7.50	7.00 – 7.50
200—No. 3 Unfilt. Pale	9.25 –10.00	9.00 – 9.50	9.00 – 9.50
300—No. 3 Unfilt. Pale	10.50 –11.50	10.00 –10.50	10.00 –10.50
500—No. 3½ Unfilt. Pale	12.00 –13.00	11.50 –12.00	11.50 –12.00
750—No. 4 Unfilt. Pale	14.50 –15.00	14.50 –15.00	14.50 –15.00
200—No. 5½ Red Oil	7.50 – 8.00	7.25 – 7.75	7.25 – 7.75
300—No. 5½ Red Oil	9.00 –10.00	9.00 – 9.50	9.00 – 9.50
500—No. 6 Red Oil	10.25 –11.25	10.00 –10.50	10.00 –10.50
750—No. 6 Red Oil	13.00 –14.00	13.00 –13.50	13.00 –13.50
CALIFORNIA			
Vis. Color	(Viscosity at 100°F.)		
100—No. 2	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
100—No. 3	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00
200—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
300—No. 3	10.50 –11.00	10.50 –11.00	10.50 –11.00
450—No. 3-3½	13.00 –13.50	13.00 –13.50	13.00 –13.50
550—No. 3-3½	14.50 –15.00	14.50 –15.00	14.50 –15.00
600—No. 3-3½	15.00 –15.50	15.00 –15.50	15.00 –15.50
100—No. 5	6.50	6.50	6.50
200—No. 5	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300—No. 5	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
400—No. 5	11.00 –11.50	11.00 –11.50	11.00 –11.50
500—No. 5	11.00 –11.50	11.00 –11.50	11.00 –11.50
600—No. 5	12.00 –12.50	12.00 –12.50	12.00 –12.50
700—No. 7	14.00 –14.50	14.00 –14.50	14.00 –14.50

CYLINDER STOCKS

**OKLAHOMA			
190-200 Vis. at 210° Brt. St.	31.00 –32.00	31.00 –32.00	31.00 –32.00
150-160 Vis. at 210° Brt. St.	25.00 –27.00	25.00 –27.00	25.00 –27.00
600 E St. 140-150 Vis.-210°	17.00 –18.00	17.00 –18.00	17.00 –18.00
600 St. Ref. Olive Green	9.00 –10.00	9.00 –10.00	9.00 –10.00
600 St. Ref. Dark Green	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00
Black Oil	5.00	5.00	5.00
PENNSYLVANIA	(1-inch Immersion Test)		
600 Steam Refined	9.00 –10.00	9.00 –10.00	9.00 –10.00
650 Steam Refined	11.50 –12.50	11.50 –13.00	11.50 –13.00
600 Flash	16.00 –17.00	16.00 –17.00	16.00 –17.00
625 Flash	26.00 –28.00	26.00 –28.00	26.00 –28.00
600 Warren E	18.50 –19.50	18.50 –19.50	18.50 –19.50
600 Oil City E	17.00 –18.00	17.00 –18.00	17.00 –18.00
600 D Filtered	25.00 –26.00	25.00 –26.00	25.00 –26.00
Cold Test Stocks (brt. filt.)	35.00 –35.50	35.00 –36.00	35.00
Cold Test Stock (dark filt.)	33.00 –34.00	33.00 –34.00	33.00

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher)

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TALK GALLONS AND YOU CAN SELL GALLONS

Station *attendants* make quart sales, station salesmen turn in gallon sales slips.

It's true most motorists need only a courteous positive suggestion to buy more than their minimum requirements.

Coreco 100% Pennsylvania Motor Oil, in one and five gallon containers, is easy to sell because it is genuine quality. It proves itself in actual use. CORECO is a profit maker to station owners.

"CORECO" PRICES
Packages Included

	55 Gal.	30 Gal.	15 Gal.	5 Gal.	1 Gal.
Light	.53	.55	.60	.61	.77
Medium	.56	.58	.63	.64	.80
Heavy	.61	.63	.68	.69	.85
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Special Duty	.71	.73	.78	.79	.95

Prices f. o. b. Oil City, Penna.

Write for dealer proposition in detail

CONTINENTAL REFINING CO.
OIL CITY PENN'A

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REPUTATION GUARANTEE SATISFACTION

On good roads or bad roads, loaded or light, Brown tanks will remain tight. No secret reinforcements nor mysterious highsounding features. Just good honest full weight material correctly built by real tradesmen. The Brown Certified Truck Tank is the result of practical oil men's experience. From the oil man's standpoint, we offer just what you expect—efficient service—oil-tight at all times—and attractive appearance—priced right. Get our figures and compare the facts.

A 1650 gallon with stake barrel carriers and underslung canloxes

BROWN SHEET IRON & STEEL CO. **ST. PAUL, MINN.**

Tear out this Coupon and mail it today

Make of Truck..... Size Tank Required.....

Other equipment on which you may send prices.....

Name..... Address.....

Refinery Markets on Wax and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(For quick reference to Refinery prices, get the OIL PRICE HANDBOOK, published annually)

WAX

PENNSYLVANIA Per Pound, New York	Prices Aug. 29	Prices Aug. 22	Prices Aug. 15
122-124 white crude scale.	3.00 – 3.125	3.00	3.00
124-126 white crude scale.	3.00 – 3.125	3.00	3.00
OKLAHOMA			
**124-126 Semi-refined wax, per pound	2.50 – 2.625	2.375– 2.625	2.25 – 2.50
CALIFORNIA			
White crude scale, per pound	6.00 – 7.00	6.00 – 7.00	6.00 – 7.00

FUEL OIL

PENNSYLVANIA			
36-40 fuel oil	4.625– 4.75	4.625– 4.75	4.50 – 4.75
30-34 fuel oil	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75
28-32 fuel oil	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75
OKLAHOMA			
38-40 straw distillate	3.25	3.25	3.25
36-38 straw distillate	3.00	3.00	3.00
32-36 gas oil, cracked	2.50 – 2.625	2.50 – 2.625	2.50 – 2.625
32-36 gas oil, str. reduced	2.50 – 2.625	2.50 – 2.625	2.50 – 2.625
28-30 fuel oil (in bbls.)	$0.95 – 1.00	$0.975–$1.00	$0.975– 1.00
26-28 fuel oil (in bbls.)	$0.90 – 0.95	$0.925–$0.95	$0.925– 0.95
24-26 fuel oil (in bbls.)	**$0.85– 0.875	**$0.85 –$0.875	**$0.85 –0.875
22-26 fuel oil (in obls.)	**$0.825–0.85	**$0.825–$0.85	**$0.825–0.85
18-22 fuel oil (in bbls.)	**$0.775–0.825	**$0.775–$0.825	**$0.80 –0.825
16-18 fuel oil (in bbls.)	**$0.75– 0.80	**$0.775–$0.80	**$0.775–0.80
14-16 fuel oil (in bbls.)	**$0.75– 0.80	**$0.775–$0.80	**$0.775–0.80
KANSAS (F. O. B. refinery Kansas destination.)			
38-40 straw distillate	3.50 – 3.75	3.50 – 3.75	3.50 – 3.75
36-38 straw distillate	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50
32-36 gas oil	2.75 – 2.875	2.75 – 2.875	2.75 – 2.875
24-26 fuel oil	†$0.95 – 1.05	*$0.95 – 1.05	*$0.95 – 1.05
18-22 fuel oil	†$0.85 – 0.90	*$0.85 – 0.90	*$0.85 – 0.87
NORTH TEXAS			
38-40 straw distillate	3.00	3.00	3.00 – 3.25
32-36 gas oil, cracked	2.25 – 2.50	2.25 – 2.50	2.375– 2.50
32-36 gas oil, uncracked	2.25 – 2.50	2.25 – 2.50	2.375– 2.50
24-26 fuel oil (in bbls.)	$0.80	$0.80	$0.775– 0.80

GULF COASTAL	Prices Aug. 29	Prices Aug. 22	Prices Aug. 15
Fuel (in bbls.)	$1.60 –$1.65	$1.60 –$1.65	$1.60 – 1.65
Gas oil	4.00 – 4.25	4.00 – 4.25	4.00 – 4.25
NORTH LOUISIANA (For Louisiana and differential territory destination)			
32-36 gas oil, cracked	3.00	3.00	3.00 – 3.25
32-36 gas oil, uncracked	3.00	3.00	3.00 – 3.25
16-20 fuel oil (in bbls.)	$1.10 – 1.15	$1.10 –$1.15	$1.10 – 1.15
ARKANSAS (For Arkansas intrastate shipment only)			
32-36 gas oil, straw	3.25 – 3.375	3.25 – 3.375	3.25
28-32 gas oil	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
Road oil	$1.25 – 1.30	$1.25 –$1.30	$1.25 – 1.30
ARKANSAS (F. O. B. Arkansas refineries for interstate shipment)			
28-32 gas oil	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
Smackover crude fuel	$1.10 – 1.15	$1.10 –$1.15	$1.10 – 1.15
Road oil	$1.15 – 1.25	$1.15 –$1.25	$1.15 – 1.25
CALIFORNIA (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more)			
14-18 fuel oil (in bbls.)	$0.65 –$0.90	$0.65 –$0.90	$ .65 –$ .90
14-18 Bunker oil (in bbls.)	$0.85 –$1.00	$0.85 –$1.00	$ .85 –$1.00
30-34 gas oil (in bbls.)	$0.95 –$1.05	$0.95 –$1.05	$ .95 –$1.05
27 Plus Diesel oil (in bbls.)	$0.90 –$1.00	$0.90 –$1.00	$ .95 –$1.05
NEW ENGLAND			

These prices have been discontinued in this table and will appear hereafter in the Seaboard market for Boston.

PETROLATUMS

PENNSYLVANIA (In cents per pound in tank cars; in barrels, in car lots ¼c per pound more.)			
Snow White	7.50 – 7.75	7.50 – 7.75	7.50 – 7.75
Lily White	6.50	6.50	6.50
Cream White	5.50	5.50	5.50
Light Amber	2.875– 3.00	2.875– 3.00	2.875– 3.00
Amber	2.625– 2.75	2.625– 2.75	2.625– 2.75
Red	2.375	2.375	2.375
Green No. 5 color	1.75	1.75	1.75

*PETROLEUM COKE

(Per ton in car lots)

Lump	$5	$5	$5
Still run	$3	$3	$3
Breeze	$2	$2	$2

† Prices Nominal. †† Only one refiner quoting. * Quotation only. ** Represents both sales and quotations.

have been having only a fair demand for gas oil.

Fuel oils were in slightly better demand late in the week with some inquiries for over next month. Spot prices on low gravity fuels have been around 75 to 80 cents a barrel, with high gravity goods bringing 95 cents to $1. One Oklahoma refiner who makes zero cold test goods during the winter said today he probably would not swing over to those products until sometime in the fall. Prices were not good enough, he said, to warrant a change.

A majority of the trade here apparently expects slightly better prices for September, and a few sales have been reported at prices from 2.5 to 5 cents a barrel over the spot price.

Oklahoma neutral oils and cylinder stocks prices fluctuated only slightly. Refiners report almost without exception that their goods have been moving well this summer. The refiners that make bright stock also have kept their production moving, although, as one refiner said yesterday, he might have had to work a little harder for business if he had not had a large export order which kept a sufficient volume moving to prevent goods from backing up.

Better demand for wax in the eastern market with the resultant advance in prices has been reflected in the Mid-Continent. Most refiners ask 2.50 to 2.625 cents for their wax, and two or three orders have been booked for September delivery at the latter figure. One refiner this week booked 100 tons at that figure.

Corrections

In the Aug. 22 column of prices in the refinery market tables of the Aug. 24 issue of NATIONAL PETROLEUM NEWS, price of N. Texas 32-36 gas oils was published erroneously as 2.375 to 2.50 cents. Prices of both cracked and uncracked gas oils should have been 2.25 to 2.50 cents on Aug. 22.

In the Aug. 15 column, price of Oklahoma 100 No. 2 color neutral oil was published erroneously as 6.00 to 6.25 cents. Price on Aug. 15 should have been 6.00 to 6.50 cents. Also, on the same date prices of 24-26 fuel and 18-22 fuel oils in Kansas should have been starred to designate prices were nominal.

LOS ANGELES—William Walker, who has been "playing around" and taking a long deferred vacation since he resigned as sales manager for the General Petroleum Corp., has opened an office at 522 Petroleum Securities Bldg., Los Angeles, and will do a general jobbing business.

NEW YORK,—Fred Shalet, who has been agent at Kansas City, Mo. for The Texas Co., has been transferred to the company's offices at New York City as auditor of disbursements for the New York district.

Exports from Tampico District

Company	June	July
Transcontinental Petroleum Co., (Standard of New Jersey)	857,497	512,286
Pan American Eastern Oil Co.	2,673,655	2,837,365
Mexican Eagle Oil Co. (El Aguila)	414,506	841,610
Cia. Mexicana Holandesa "La Corona"	1,001,024	496,895
The Texas Co. of Mexico, S. A.	142,907	.....
Mexican Gulf Oil Co.	.....	.....
Sinclair Mexican Companies	360,014	312,270
East Coast Oil Co. of Mexico, S. A. (Southern Pacific)	51,823	.....
Pierce Oil Corp.	.....	.....
Mexican Atlas Oil Co.	162,785	122,911
La Espuela Oil Co.	58,826	23,584
Moctexuma Terminal	.....	.....
Mexican Oil Products Co.	28,281	.....
New England Fuel Oil Co.	.....	.....
Panuco Boston Oil Co.	.....	.....
Totals	5,751,318	5,146,921

Motor Gasoline is More Active In Chicago Resale Market

CHICAGO, Aug. 27

SPOT 58-60 U. S. Motor gasoline was a little more active late in the week, it was reported today from several quarters. Throughout the week there was no change in demand over the first half of the month, with buying in small quantities for immediate needs.

Gasoline from outside Oklahoma continued to compete actively in the Chicago area with Group 3 goods. Oklahoma refiners at opening of business were quoting 6.375 to 6.50 cents, and at close were asking 6.25 cents. Indiana, north Texas, and Louisiana U. S. Motor gasoline was offered over the week at 6.25 cents, Group 3. Some gasoline from outside Group 3 has sold at 6.125 cents Group 3 this week, with an occasional car of Oklahoma goods going at that price, in one instance a seller Thursday reported his sales at this price were not on doctor test goods while today he was moving full specification gasoline at 6.125 cents Group 3.

High test gasoline demand was quiet over the week. Prices generally showed little change. The 60-62, 437 e.p. grade sold at 6.50 cents Monday and at 6.375 to 6.50 cents balance of the week; 60-62, 400 e.p. gasoline sold at 6.625 to 6.75 cents; and 64-66, 375 e.p. grade at 6.875 to 7 cents.

Announcement that Humble Oil & Refining Co. Tuesday had reduced prices on west Texas and Panhandle crude oil brought up the question of Mid-Continent crude prices which overshadowed current rumors of what Standard of Indiana might do to the QDA.

Kerosene price was steady and unchanged. One carload marketer reported that his ratio of kerosene to gasoline sales was higher now than a year ago. Jobber demand has been fair over the week. The 41-43 w.w. goods sold at 4 to 4.125 cents.

September heavy oil inquiries from industrial companies were coming in the market this week in increasing volume. Volume of orders placed for next month's requirements has not been large. Sellers are quoting today's spot prices or asking up to 5 cents more. Monday an industrial company contracted for 200 cars of low gravity fuel at $0.85 for delivery over September and October. A carload marketer reported having 40 cars booked for September.

Price on 28-30 fuel was unchanged at $0.95 for high cold test and $1.00 to $1.05 for low cold test goods; 24-26 grade was $0.85 to $0.875; and 18-22 fuel $0.80 to $0.825. The 22-26 grade was sold at $0.85 to $0.875 until Thursday when the market was $0.825 to $0.85. Smackover quotation was $1.10 to $1.15.

Jobbers are becoming interested in domestic heating oils for storage, trade reports, and buying goods at present prices. Ordinary 32-36 straw gas oil sold at 2.75 cents with low cold test goods at 3 cents, and Shreveport 32-36 straw gas oil is quoted at 3.125 cents Group 3. Zero dark gas oil moved at 2.75 to 2.875 cents, the ordinary grade at 2.625 cents, and gas oil for gas plants at 2.50 cents. Distillate, 38-40 straw, was unchanged at 3.25 to 3.75 cents.

Temperatures near seasonal normal are forecast for next week in Standard of Indiana territory. And probably there will be two or three shower periods, especially in the northern portion.

MAYFIELD, Ky.—West Kentucky Oil Co., with headquarters here, has just completed two stucco service stations, one here and one at Clinton, Ky., according to Orvis Griffin, general manager. The company, which was three years old in August, now has four bulk stations and nine service stations in western Kentucky.

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Week's Price Changes Tank Wagon Markets

Gasoline Changes

Standard of New York—T.W. price gasoline advanced 1 cent, s.s. 2 cents, Boston, to 18 cents and 19 cents respectively, Aug. 25.

Trade Expands in Third Week of August

WASHINGTON, Aug. 27.—Measured by the volume of check payments, business in the week ended Aug. 20 was larger than in either the preceding week or the corresponding week of 1926, according to the Department of Commerce. Wholesale prices recovered somewhat from the preceding week but were still substantially below the level of last year.

Prices for both cotton and wheat not only increased over the previous week but averaged substantially higher than in the corresponding week of 1926. Iron and steel prices, on the other hand, showing no change from the preceding week, were lower than last year. Receipts of cotton into sight were larger than a year ago. The volume of new building contracts awarded in 37 states was smaller than in the previous week but larger than a year ago.

Loans and discounts of federal reserve member banks showing no change from the preceding week, were higher than in the corresponding week of 1926. Prices of stocks listed on the New York Stock Exchange averaged higher than in the previous week, being substantially greater also than in the same week of last year. Interest rates on call loans averaged lower than in either the previous week or the same week of 1922. Bond prices continued to average higher.

Interest rates on time money, averaging higher than in the preceding week, were lower than in the same week a year earlier. The federal reserve ratio continued to expand as compared with both price periods. Business failures were more numerous than in either the preceding week or the same week of 1920.

Output of bituminous coal in the week ended August 13 was larger than in the previous week but smaller than in the same week a year ago. The cut of lumber during the same week was smaller than in either prior period. Beehive coke production was greater than in the preceding week but showed a substantial decline from the second week of August of the preceding year. Receipts of wheat were running higher than a year ago. Receipts of cattle, however, were smaller than last year, while hog receipts showed an increase.

Tank Wagon, Service Station Markets for Gasoline and Kerosene In United States Territories and Canada

(OIL PRICE HANDBOOK has t.w. and s.s. markets for whole year arranged for quick reference)

These Prices In Effect August 29, 1927

S. O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Atlantic City, N. J.	16	2	18	*	14
Newark, N. J.	16	2	18	20	14
Annapolis, Md.	16	4	20	23	12
Baltimore, Md.	16	4	20	23	10
Cumberland, Md.	16	4	20	23	14
Washington, D. C.	16	2	18	21	12
Danville, Va.	16	4½	20.5	*	14
Norfolk, Va.	16	4½	20.5	23.5	12
Richmond	16	4½	20.5	23.5	14
Roanoke, Va.	16	4½	20.5	23.5	14
Petersburg, Va.	16	4½	20.5	23.5	14
Williamsburg, Va.	16	4½	20.5	*	14
Charleston, W. Va.	16	4	20	23	14
Clarksburg, W. Va.	16	4	20	23	14
Keyser, W. Va.	16	4	20	*	14
Parkersburg, W. Va.	13	4	17	20	14
Wheeling, W. Va.	16	4	20	23	14
Charlotte, N. C.	16	4	20	23	14
Hickory, N. C.	16	4	20	23	14
High Point, N. C.	16	4	20	*	14
Mt. Airy, N. C.	16	4	20	23	14
Salisbury, N. C.	16	4	20	23	14
Charleston, S. C.	15	5	20	23	14
Columbia, S. C.	15	5	20	23	14

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

*New York City	17	0	17	21	15
Albany, N. Y.	17	0	17	19	15
Buffalo, N. Y.	15	0	15	18	14
†Rochester, N. Y.	13	0	13	16	13
Syracuse, N. Y.	17	0	17	19	15
Boston, Mass.	18	0	18	19	15
Augusta, Me.	17	3	20	22	15
Manchester, N. H.	17	2	19	21	15
Burlington, Vt.	17	3	20	22	15

*In steel barrels.

†It is reported that S. O. New York is selling a second grade of gasoline at Rochester, 4c below the above posted prices which apply on its Socony grade.

ATLANTIC REFINING

Pittsburgh, Pa.	16	*	16	*22	14
Philadelphia, Pa.	15	*	15	*21	14
Allentown, Pa.	16	*	16	*22	14
Erie, Pa.	12	*	12	*18	14
Scranton, Pa.	16	*	16	*22	14
Altoona, Pa.	16	*	16	*22	14
Dover, Del.	16	3	19	22	14
Wilmington, Del.	16	3	19	22	14
Providence, R. I.	17	2	19	19	15
Boston, Mass.	17	0	17	17	15
Springfield, Mass.	17	0	17	17	15
Worcester, Mass.	17	0	17	17	15
Hartford, Conn.	19	2	21	22	15
New Haven, Conn.	19	2	21	21	15

*3-cent state tax is collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Lexington, Ky.	13	5	18	21	15.5
Louisville, Ky.	14	5	19	22	15
Covington, Ky.	14	*5	19	22	15.5
Clarksdale, Miss.	13	4	17	20	12.5
Gulfport, Miss.	††14.5	4	††18.5	21.5	14
Jackson, Miss.	13	4	17	20	13.5
Natchez, Miss.	12.5	4	16.5	19.5	14
Vicksburg, Miss.	12.5	4	16.5	19.5	14
Birmingham, Ala.	14	4	18	21	15.5
Mobile, Ala.	13	4	17	20	15
Montgomery, Ala.*	15	4	19	22	16.5
Atlanta, Ga.	†14	3½	18	21	15
Augusta, Ga.	†14	3½	18	19	16
Macon, Ga.	†15	3½	19	22	16
Savannah, Ga.	†12	3½	16	18	14
Jacksonville, Fla.°	10	5	15	18	14
Miami, Fla.°	12	5	17	20	15.5
Tampa, Fla.°	9	5	14	17	14
Pensacola°	**11	5	**16	19	15

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

†Georgia has ½ cent per gal. inspection fee on gasoline which is deducted as well as the state gasoline road tax of 3½ cents, to get the actual net tank wagon market to dealer.

°Florida gasoline prices include ½c inspection fee.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. INDIANA

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Chicago, Ill.	14	2	16	18	12
Decatur, Ill.	14.2	2	16.2	18.2	12.1
E. St. Louis, Ill.	13.1	2	15.1	17.35	11.2
Joliet, Ill.	14.4	2	16.4	18.4	12.3
Peoria, Ill.	10	2	12	14	12.1
Quincy, Ill.	14.2	2	16.2	18.2	8.9
Indianapolis, Ind.	14.2	3	17.2	19.2	13.2
Evansville, Ind.	14	3	17	19	13
South Bend, Ind.	14.4	3	17.4	19.4	13.4
Detroit, Mich.	14.8	2	16.8	18.8	13.7
Grand Rapids, Mich.	14.7	2	16.7	18.7	13.6
Saginaw, Mich.	14.9	2	16.9	18.9	13.8
Green Bay, Wis.	14.6	2	16.6	18.6	12.4
Madison, Wis.	14.3	2	16.3	18.3	12.1
Milwaukee, Wis.	14.1	2	16.1	18.1	11.9
La Crosse, Wis.	15.2	2	17.2	19.2	13
Minneapolis, Minn.	12	2	14	14	12.9
Duluth, Minn.	13.5	2	15.5	17.5	12.9
Mankato, Minn.	15.1	2	17.1	19.1	12.7
Des Moines, Iowa	14	3	17	19	12.3
Davenport, Iowa	14.5	3	17.5	19.5	12.3
Sioux City, Iowa	14.1	3	17.1	19.1	11.9
Mason City, Ia.	14.5	3	17.5	19.5	12.3
St. Louis, Mo.	*13.6	2	15.6	17.9	11.3
Kansas City, Mo.	†12.9	2	14.9	16.9	10.6
St. Joseph, Mo.	†14.5	2	16.5	18.5	11.2
Fargo, N. D.	15	2	17	19	14.9
Grand Forks, N. D.	17.2	2	19.2	21.2	15.2
Minot, N. D.	16.9	2	18.9	20.9	14.9
Pierre, S. D.	15.5	4	19.5	21.5	13.9
Huron, S. D.	12.5	4	16.5	18.5	13.9
Wichita, Kans.	12.8	2	14.8	16.8	10.8
Bartlesville, Okla.	12.8	3	15.8	17.8	10.8

S. O. Indiana Q. D. A. schedule on tank wagon deliveries of gasoline, effective March 3 thru territory, except Wisconsin effective March 4: 50 gals. and over on delivery, 1c discount; 6,000 gals. and over per month, 1½c; 10,000 gals. and over per month, 2c; 15,000 gals. and over per month, 3c, except latter discount does not apply in Chicago.

Service station discounts: 200 gals. or more per month, and 2400 gals. or more per year, 2c per gal.

March 1, 1c discount on kerosene in 50 gal. dumps thru territory.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. NEBRASKA

Omaha, Neb.	14.25	2	16.25	16.25	12.25
McCook	12.75	2	14.75	16.75	11.50
Norfolk	14.75	2	16.75	18.75	12.75
North Platte	15.75	2	17.75	19.75	13.50
Scottsbluff	15.25	2	17.25	19.25	13.00

CONTINENTAL OIL

Denver, Colo.	15	3	18	20	12.5
Pueblo, Colo.	15	3	18	20	14.5
Grand Junction, Colo.	18.5	3	21.5	23.5	18
Casper, Wyo.	15	3	18	20	13
Cheyenne, Wyo.	16	3	19	21	14.5
Butte, Mont.	19	3	22	22	19
Helena, Mont.	19.5	3	22.5	24.5	19
Salt Lake City, Utah.	17.5	3½	21	23	17
Boise, Ida.	19.5	4	23.5	25.5	19
Twin Falls, Ida.	19.5	4	23.5	25.5	19
Albuquerque, N. M.	16	5	21	24	17

S. O. CALIFORNIA

Phoenix, Ariz.	19	3	22	26	21.5
Los Angeles, Cal.	13.5	3	16.5	20.5	15.5
Fresno, Cal.	14	3	17	21	16.5
San Francisco, Cal.	14	3	17	21	15.5
Reno, Nev.	18	4	22	26	19
Portland, Ore.	14.5	3	17.5	21.5	16.5
Seattle, Wash.	14.5	2	16.5	20.5	16.5
Spokane, Wash.	18.5	2	20.5	24.5	20.5
Tacoma, Wash.	14.5	2	16.5	20.5	16.5

S. O. LOUISIANA

Little Rock, Ark.	13	5	18	21	12
Alexandria, La.	13	2	15	18	†14
Baton Rouge, La.	12	2	14	17	†12.5
Lake Charles, La.	12	2	14	17	†12.5
New Orleans, La.	*13.5	2	*15.5	*18.5	*14
Shreveport, La.	13.5	2	15.5	18.5	†13
Lafayette, La.	13	2	15	18	†13.5
Bristol, Tenn.	16	3	19	22	14
Chattanooga, Tenn.	16.5	3	19.5	22.5	15
Knoxville, Tenn.	16.5	3	19.5	22.5	15
Nashville, Tenn.	15	3	18	21	15
Memphis, Tenn.	12	3	15	18	14

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana include 1c state tax.

S. O. OHIO

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
All Ohio points	16	3	19	21	14

MAGNOLIA PETROLEUM

Muskogee, Okla.	12	3	15	18	9
Oklahoma City	12	3	15	18	9
Tulsa, Okla.	12	3	15	18	9
Fort Smith, Ark.	11	5	16	17	12
Little Rock, Ark.	13	5	18	21	12
Texarkana, Ark.*	†15	5	†20	†20	12
Dallas, Tex.	††15	3	††18	††18	11
Fort Worth, Tex.	**13	3	**16	**16	10
Houston, Tex.	††15	3	††18	††18	15
San Antonio, Tex.	**13	3	**16	**16	11
El Paso, Tex.	**15	3	**18	**18	16

*Within city of Texarkana the state tax on gasoline is 3c per gal. conforming with the Texas state tax. In Texarkana district outside of the city the 5c Arkansas tax applies.

†3c per gal. discount to dealers.

**2c per gal. discount to dealers at El Paso, Feb. 28; at Fort Worth and San Antonio, Aug. 19.

††4c per gal. discount to dealers at Houston, March 16, 1927; at Dallas, Aug. 19.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M. & P. Naphtha	Cleaner Naphtha
Chicago	16	18	18
Detroit	17.7	19.7	19.7
Kansas City	16.2	†18.2	†18.2
Milwaukee	16.7	*20.7	*20.7
Minneapolis	*20	*22	*22
St. Louis	15.9	17.9	17.9
New York	..	19	

*Includes 2c state tax.

†Includes 1c city tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Toronto	19.5	3	22.5	26	21
Ottawa	19.5	3	22.5	26	21
Cochrane	24.5	3	27.5	36	26
Ft. William	24.5	3	27.5	31	23.5
MANITOBA					
Winnipeg	24.5	3	27.5	31	23.5
SASKATCHEWAN					
Regina	27.5	0	27.5	32	26.5
ALBERTA					
Edmonton	26.5	3	29.5	33	25.5
Calgary	24.5	3	27.5	31	23.5
BRITISH COLUMBIA					
Vancouver	21	3	24	27	22
QUEBEC					
Montreal	20.5	3	23.5	27	21
Quebec City	22.5	3	25.5	31	23
Three Rivers	22.5	3	25.5	30	23
NEW BRUNSWICK					
St. John	24.5	3	27.5	32	24
Moncton	24.5	3	27.5	32	24
NOVA SCOTIA					
Halifax	24.5	3	27.5	32	24
Sydney	26.5	3	29.5	34	26
PRINCE EDWARD ISLAND					
Charlottetown	24.5	3	27.5	31	24

Note: In districts surrounding these points 1c additional is added to city price.

Eastern Gasoline Market Quiet; Kerosene Demand Increases

Staff Special
NEW YORK, Aug. 27

EASTERN gasoline markets experienced another quiet week. Weather was unfavorable and prevented any extensive buying by jobbers.

Again there was much speculation among the trade in New York as to the trend of gasoline in the immediate future if the weather doesn't take a favorable turn for the motorist. However, markets in most sections were unhampered as far as prices were concerned. In fact it was felt that prices would show no further decline unless refiners were willing to stand a loss, and in an effort to sustain prices at their present levels it is thought that drastic curtailment of production would doubtless be forthcoming.

The trade here cited other bearish factors such as weakness in the Mid-Continent, and that tanker rates from California to the East coast are declining. It is true the situation in the Mid-Continent has no direct effect on eastern gasoline prices, but eastern refiners nevertheless dislike to have their outlet territory narrowed by Mid-Continent gasoline working its way into western New York state, which has oftentimes been the case in the past.

Eastern refiners are also keeping an eye on California, largely because of the decline in tanker rates to the East coast have shown the past few weeks. Refinery prices on the West coast have shown no appreciable change, in fact dealers here report 6.25 cents is about the best price they can do on California gasoline. On the other hand, it is pointed out that Mid-Continent gasoline would more likely be brought around to the East coast, in preference to California, in view of the low prices in that area.

This week there were two cargo inquiries for U. S. Motor gasoline in the Gulf market for shipment to the East coast. In addition to this a 55,000-barrel cargo of U. S. Motor sold at 6.75 cents f.o.b. the Gulf for shipment north of Hatteras, one refiner reported. Owners ask 25 cents a barrel for clean bottoms for shipment from the Gulf to north of Hatteras with 22½ cents the last paid rate. It was stated by the refiner that sold the 55,000-barrel cargo, however, that the goods which would be loaded the second week in September, would not come as far north as New York.

At New York, U. S. Motor gasoline in tank cars to the jobbing trade was generally held at 8.25 cents all week. Several dealers reported that an 8-cent price was being made for large quantities to resale dealers, but sales at this figure direct to the jobbing trade could not be traced at New York. At least one Philadelphia refiner continued to quote 8 cents for U. S. Motor gasoline to large buyers, but the general asking price at this point was 8.25 cents. At Baltimore, most sellers were asking 8.50 cents for U. S. Motor gasoline, but sufficient goods were moving at 8.25 cents to be considered partly representative of a part of the going market.

Around the middle of the week, Atlantic Refining Co. advanced tank wagon price of gasoline 1 cent in tank wagon prices at Boston, which was met by the Standard of New York Aug. 25. New England refiners accordingly reported a slightly improved refinery market in the Boston district toward the end of the week. For the most part U. S. Motor at Boston was held at 8.50 cents. Odd transactions closed at considerably under this price, could hardly be considered representative of the general market in view of the provisions involved in the deals.

The untimely cold weather has stimulated kerosene demand somewhat. A few sellers reported inquiries were more frequent and all around better movement was noted than for some time past. Prices, however, were largely unchanged at most points with 41-43 prime white goods at 6.25 to 6.50 cents, New York; 43-45 water white kerosene at the same level at Philadelphia, and 41-43 water white 6.75 cents at Boston.

Furnace oil and gas oil were slightly lower at Boston, but prices at New York were unchanged. Boston refiners were of the opinion that prices would likely rally in the near future with fall demand near.

Gulf Export Market Tightened; Sellers Hold Prices Steady

Staff Special
NEW YORK, Aug. 27

IN THE Gulf export markets, sellers have tightened their reins and are unwilling to reduce prices to get the small amount of foreign business available. Quotations at the close of business this week were 0.25 cent higher than a week ago, and the trade generally believed that these prices could not be shaded on mixed cargoes for export.

Prices for domestic shipment from the Gulf were a shade lower and buyers were a bit more active. A 55,000-barrel cargo of U. S. Motor gasoline was reported sold by one refiner at 6.75 cents, f.o.b. the Gulf for early September movement to the East coast. The same refiner also reported he was working on two additional cargoes for like quantities for coastwise shipment.

Early this week, a leading Independent refiner sold two 60,000-barrel cargoes of U. S. Motor, 61-63 390 end point, 64-66 375 end point gasolines, prime and water white kerosenes, for late September shipment from the Gulf to a French subsidiary. Prices at which the goods were sold were 7.375 cents, 8 cents, 8.50 cents, 5 cents, and 6 cents, respectively.

Two inquiries for smaller cargoes were closed by another independent refiner later in the week. One involving 45,000 barrels of U. S. Motor and 64-66 375 end point gasoline was sold to a French buyer at 7.25 cents and 8.25 cents, respectively. The other involving approximately 30,000 barrels of U. S. Motor and 64-66 375 end point gasoline was sold to another French buyer at the same prices.

The market for heavier oils was considerably stronger this week with gas oil reported comparatively scarce. One large refiner announced they would have no gas oil to offer on the spot market until after the first of next year and this doubtless gave rise to the firmer tone evidenced in the gas oil market. Prices were unchanged with 26-28 translucent gas oil generally quoted at 3.75 to 3.875 cents and the 30-32 translucent grade largely held at 0.125 cent more.

Bunker oil was steady at $1.30 a barrel in cargo lots. For bunkering there was no change in the prices asked for Grade C. At New Orleans, most refiners were asking $1.45 with $1.40 the general quotations further west on the Gulf.

Wax demand was described as good by most sellers with white crude scale largely quoted at 2.75 to 3 cents, and a steady movement of small lots reported.

Gulf Lubes Are Steadier

HOUSTON, Aug. 27.—Removal of some distress oil from the Gulf Coastal lubricant market brought price strength this week. Manufacturers have not changed their list prices but are making fewer concessions to get business. Demand is described as better in some quarters, especially where sales effort is directed toward talking quality.

Complete Seaboard Market

(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the years 1924-1925-1926)

Eastern Domestic Markets

(Prices in bulk except where otherwise noted f.o.b. refinery or seaboard plant)

	Aug. 29	Aug. 22
U. S. Motor gasoline, tank cars, New York	8.25	8.25
U. S. Motor gasoline, tank cars, Philadelphia	8.00 – 8.25	8.00 – 8.25
U. S. Motor gasoline, tank cars, Baltimore	8.25 – 8.50	8.25
U. S. Motor gasoline, tank cars, Boston	8.50	8.50
California U. S. Motor gasoline, tank cars, Philadelphia	8.25	8.25
California U. S. Motor gasoline, tank cars, Baltimore	8.25 – 8.50	8.25 – 8.50
41-43 p.w. kerosene, New York	6.25 – 6.50	6.25 – 6.50
43-45 w.w. kerosene, Philadelphia	6.25 – 6.50	6.25 – 6.50
41-43 p. w. kerosene, Boston	6.75	6.75
36-40 gas oil, New York	5.25	5.25
28-34 gas oil, New York	5.00	5.00
28-34 gas oil, Boston	5.00 – 5.25	5.00 – 5.25
38-42 furnace oil, New York	6.00	6.00
36-40 Furnace Oil, Boston	6.25 – 6.50	6.25 – 6.375
Grade C bunker oil, New York	$1.65	$1.65
Grade C bunker oil, Boston	$1.70	$1.70
Diesel oil, New York	$2.10	$2.10

New York Export Market

(Gasoline and kerosene in cases in bulk. Lubricating oils are all Penna. products, prices per gal. in bbls.)

	Aug. 29	Aug. 22
U. S. Motor gasoline	24.40	24.40
43-45, 150 w.w. kerosene	17.15	17.15
42-44, 110 s.w. kerosene	16.15	16.15
CYLINDER OILS		
Bright stock, dark	40.00 –41.00	40.00 –41.00
Filtered D 600	31.00 –32.00	31.00 –32.00
Filtered E 600 Warren	25.00 –26.00	25.00 –26.00
Unfiltered 600 s.r.	16.50 –17.00	16.00 –16.50
Unfiltered 650 s.r.	19.50 –20.00	19.50 –20.00
600 Flash s.r.	23.00 –23.50	23.00 –23.50
630 Flash s.r.	33.00 –34.00	33.00 –34.00
RED ENGINE OILS (Vis. 100°)		
300 vis. No. 6½ color	20.00	21.00
250 vis. No. 6 color	19.00	20.00
200 vis. No. 6 color	18.50	19.50
PALE ENGINE OILS (Vis. 100°)		
230 vis. No. 3¾ color	24.00	25.00
180 vis. No. 3¼ color	20.00	21.00
100 vis. No. 2¼ color	15.75	16.75
MOTOR OILS (Vis. 100°)		
600 vis. No. 7 color	35.00	35.00
500 vis. No. 7½ color	33.00	33.00
400 vis. No. 7½ color	31.00	31.00
300 vis. No. 6 color	30.00	30.00
200 vis. No. 3¼ color	24.00	24.00
WAXES (Pa. stocks; in cents per pound, f.a.s. carload lots)		
WHITE CRUDE SCALE (In barrels)		
122-124 A.m.p.	3.00 – 3.125	3.00 – 3.125
124-126 A.m.p.	3.00 – 3.125	3.00 – 3.125
FULLY REFINED (In burlap bags)		
123-125 A.m.p. Philadelphia	4.125– 4.25	4.00 – 4.125
125-127 A.m.p.	4.125– 4.25	4.00 – 4.125
128-130 A.m.p.	4.25 – 4.375	4.25
130-132 A.m.p.	4.50 – 4.625	4.50
133-135 A.m.p.	*5.50 – 5.75	5.25 – 5.50
135-137 A.m.p.	*6.00	5.75 – 6.00
YELLOW CRUDE SCALE		
124-126 A.m.p.	2.875– 3.00	2.875

* Prices Nominal

Gulf Export Market

(F.o.b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. and over, except where otherwise noted.)

GASOLINE	Aug. 29	Aug. 22
U. S. Motor	7.50	7.25
60-62, 400 e.p.	7.75	7.75
61-63, 390 e.p.	8.00	7.75 – 8.00
64-66, 375 e.p.	8.50	8.25
U. S. Motor, cases (cargo lots)	$1.65	$1.65
64-66, cases (cargo lots)	$1.80	$1.80
KEROSENE		
43-45 water white	6.00	6.00
41-43 prime white	5.00	5.00
Water white, cases (cargo lots)	$1.55	$1.55
Prime white, cases (cargo lots)	$1.45	$1.45
DOMESTIC GAS AND BUNKER OILS		
*26-28 gravity	3.75 – 3.875	3.75 – 3.875
*30-32 gas oil	3.875– 4.00	3.50 – 3.75
Grade C bunker oil	$1.40 –$1.45	$1.40 – 1.45
Grade C bunker oil, cargoes	$1.27 –$1.30	$1.27 – 1.30

*Translucent thru neck of 4 oz. bottle.

MEXICAN CRUDE AND BUNKER OILS (F.o.b. steamer, Tampico)		
Heavy Panuco crude taxes to be paid	$1.12	$1.12
Grade C bunker oil, for bunkering purposes, taxes paid	$1.50	$1.50
SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F; cold test 0) (Tanker, f.o.b. Houston)		
100 vis. No. 2 unfiltered pale	6.00	6.00
150 vis. No. 3½ unfiltered pale	8.50	8.50
200 vis. No. 3 unfiltered pale	9.00	9.00
300 vis. No. 3 unfiltered pale	9.50	9.50
500 vis. No. 3½ unfiltered pale	11.00 –11.50	11.00 –11.50
200 vis. No. 5½ red oil	7.00 – 8.00	7.00 – 8.00
300 vis. No. 5½ red oil	8.00 – 9.00	8.00 – 9.00
500 vis. No. 6 red oil	10.00 –10.50	10.00 –10.50

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Aug. 29	Aug. 22
Gasoline, U. S. Motor, 53-55 Gravity	6.00 – 7.00	6.00 – 7.00
Gasoline, U. S. Motor, blends and special cuts	7.00 – 8.00	7.00 – 8.00
Gas Oil, 30-34, in bbls.	$0.95 –$1.05	$ .95 –$1.05
Diesel Oil, 27 plus, in bbls.	$0.95 –$1.05	$ .90 –$1.00
Bunker Oil, 14-18, in bbls.	$0.85 –$1.00	$ .85 –$1.00
Fuel Oil, 14-18, in bbls.	$0.70 –$0.75	$ .70 –$ .75
Kerosene, 38-40 w.w., 125-150 flash, in gals.	4.50 – 5.00	4.50 – 5.50
Cased Goods		
Gasoline, U. S. Motor	$1.75 –$1.80	$1.75 –$1.80
Kerosene, 38-40, w.w., 125-150 flash	$1.40 –$1.50	$1.40 –$1.50

Prices of Fully Refined Wax are Advanced

Staff Special

NEW YORK, Aug. 27

Fully refined waxes advanced 0.125-cent a pound in New York this week. These grades, due to the fact that few refiners are now making them, are comparatively scarce, and dealers reported it rather difficult to meet the demand of foreign buyers. Fully refined waxes with high melting points are the hardest to obtain and prices quoted by most resale agents are nominal.

No change is noted in the market for white crude scale although the opinions of several dealers vary greatly. Prices of 122-124 and 124-126 A.m.p. have been advanced to 3.25 and 3.50 cents by a few dealers, whereas others continue to report their ability to buy at prices which permit them to quote 3 to 3.125 cents to foreign buyers.

No large sales of wax were reported this week, but most sellers said there was a steady demand for small lots.

Lubricating oils were generally unchanged in price except for the 600 steam refined which was quoted 0.50-cent higher by several sellers. Red and pale engine oils were all down 1 cent a gallon but motor oil prices were fairly steady at unchanged prices.

TULSA, Aug. 27.—A gasoline plant and booster station is being erected by the Empire companies just south of Wichita on its main gas line from the Panhandle fields of Texas. The main compressor building will house four 500-horsepower Cooper engines. In the auxiliary will be three 190-horsepower Cooper compressors. The gasoline plant will use the absorption process and have a capacity of 12,000 gallons per day.

Eastern Kentucky Market

ASHLAND, Aug. 29.—Today's prices in eastern Kentucky refining district are:

60-62	400-425	endpoint gasoline	9.25
64-66	365-375	endpoint gasoline	9.50
68-70	325-350	endpoint gasoline	9.75
41-43	W. W. Kerosene		6.00
34-36	Gas Oil		4.50
24-26	Fuel Oil		3.375
14-16	Fuel Oil		3.375

Crude Oil Prices, as Posted by Major

(Crude prices for years 1924-1925-1926 in

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$2.65
Bradford District Oil in National Transit Lines (Bradford District)	2.65
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	2.55
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	2.55
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	2.50
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	2.25
Keister Grade in National Transit Lines (Butler Co.)	1.10
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.40
Corning Grade in Buckeye Pipe Lines (Ohio)	1.45
Corning, O. heavy grade	1.35
*Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.50
Ragland Grade in Cumberland Pipe Lines (Kentucky)	.95

*Somerset oil run prior to Oct. 1922, 1, takes price of 6 cents lower than above quotations.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines.....$1.50

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective March 14, 1927

Wooster	$1.57	Plymouth	$1.33
Lima	1.71	West. Kentucky	1.33
Waterloo	1.35	*Canadian Petro.	2.11
Indiana	1.48	*Oil Springs	2.18
Princeton	1.60	*Posted by Imperial Oil Ltd.	
Illinois	1.60		

OKLAHOMA, KANSAS And NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective March 12, 1927

28-28.9	$1.12	35-35.9	$1.26
29-29.9	1.14	36-36.9	1.28
30-30.9	1.16	37-37.9	1.30
31-31.9	1.18	38-38.9	1.32
32-32.9	1.20	39-39.9	1.34
33-33.9	1.22	40-40.9	1.36
34-34.9	1.24	41-41.9	1.38
42-42.9	$1.40	48-48.9	$1.52
43-43.9	1.42	49-49.9	1.54
44-44.9	1.44	50-50.9	1.56
45-45.9	1.46	51-51.9	1.58
46-46.9	1.48	52 and above	1.60
47-47.9	1.50		

Above schedule met on March 12, by Gulf, Mid-Continent Pet. Corp., and Empire; by Carter, Humble and the Texas Co. on March 14.

Humble Oil & Refining Co. Prices
(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

March 14, same schedule as Prairie in above fields except that Humble is paying 2c less for each degree of gravity on oil below 28°.

Mirando, Tex.....$1.00

Magnolia Petroleum Co.
(In Oklahoma, Kansas and North and East Central Texas)

Effective May 5

Below 33	$1.05	43-43.9	$1.27
33-33.9	1.07	44-44.9	1.29
34-34.9	1.09	45-45.9	1.31
35-35.9	1.11	46-46.9	1.33
36-36.9	1.13	47-47.9	1.35
37-37.9	1.15	48-48.9	1.37
38-38.9	1.17	49-49.9	1.39
39-39.9	1.19	50-50.9	1.41
40-40.9	1.21	51-51.9	1.43
41-41.9	1.23	52 and above	1.45
42-42.9	1.25		
Corsicana heavy			$1.00

Carter Oil Co.
(Oklahoma and Kansas)

March 14, same schedule as Prairie.

PANHANDLE, TEXAS
Humble Oil & Refining Co.

Effective Aug. 23

Hutchinson, Carson and Wheeler Counties....$0.75
Gray County, Effective March 14:

28-28.9	$ .80	37-37.9	$ .98
29-29.9	.82	38-38.9	1.00
30-30.9	.84	39-39.9	1.02
31-31.9	.86	40-40.9	1.04
32-32.9	.88	41-41.9	1.06
33-33.9	.90	42-42.9	1.08
34-34.9	.92	43-43.9	1.10
35-35.9	.94	44 and above	1.12
36-36.9	.96		

WEST TEXAS
Humble Oil & Refining Co.

Effective Aug. 23

Crane, Upton, Crockett and Pecos Counties...$0.60

NORTH LOUISIANA — ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton and De Soto

Effective March 14, 1927

Below 28	$1.10	40-40.9	$1.36
28-28.9	1.12	41-41.9	1.38
29-29.9	1.14	42-42.9	1.40
30-30.9	1.16	43-43.9	1.42
31-31.9	1.18	44-44.9	1.44
32-32.9	1.20	45-45.9	1.46
33-33.9	1.22	46-46.9	1.48
34-34.9	1.24	47-47.9	1.50
35-35.9	1.26	48-48.9	1.52
36-36.9	1.28	49-49.9	1.54
37-37.9	1.30	50-50.9	1.56
38-38.9	1.32	51-51.9	1.58
39-39.9	1.34	52 and above	1.60
Smackover, below 24			*$1.00
do 24 and above			* 1.25
Bellevue			1.25
Cotton Valley			1.00
**Urania, La.			1.00
†East El Dorado			1.00

**Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

*Met on July 6 by Louisiana Oil, Atlantic Oil Producing, and Shreveport — El Dorado Pipe Line Co.

STEPHENS, ARKANSAS

Atlantic Oil Producing Co. and Louisiana Oil Refining Corp.

Below 28	$1.00	30-30.9	$1.06
28-28.9	1.02	31-31.9	1.08
29-29.9	1.04	32 and above	1.10

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective March 14

Grades A	$1.20	29-29.9	$1.25
Grades B:		30-30.9	1.27
Below 25	1.15	31-31.9	1.29
25-25.9	1.17	32-32.9	1.31
26-26.9	1.19	33-33.9	1.33
27-27.9	1.21	34-34.9	1.35
28-28.9	1.23	35 and above	1.37

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

U.S. Motor and Natural Gasolines Are Firmer in California

LOS ANGELES, Aug. 27

THERE are a number of refiners in California who are about to reach the conclusion that they cannot make any money if they sell their products too cheap, and as a result of this awakening, natural gasoline, motor fuel and fuel oil prices are gaining strength, with a promise of greater strength and followed by higher prices.

Naturally this program would be upset if some refiner decided to take a lot of business away from his rivals by cutting the price below a profitable margin, which is not expected.

A little tempest appeared on the horizon in southern California this week when one concern operating a number of stations announced that they would sell gasoline at 6 gallons for a dollar. This dealer had come into possession of about 25,000 gallons of gasoline and had a contract with a small refinery for 10 cars.

But when this concern announced through an advertisement what was doing, his contract for additional cars of gasoline was cancelled. And this price cutter is having a lot of trouble in placing any orders, with indications that he will have a hard time securing new supplies.

The natural gasoline market is also clearing up with a promise that prices will advance in another week or so. It is understood that the larger refiners feel that they can use practically all of the natural gasoline not now under contract and they seem to feel that this product is worth about 9 cents when used for blending. At present, and for the past month, some spot natural gasoline was obtainable at 7½ cents, and in a few instances, and in small lots, it could be bought slightly under that figure.

The contract price has never fallen under 9 to 10 cents. If the spot supply is contracted over a year's period at around 9 cents, there will be no more natural gasoline available at 7.50 cents in California.

Gasoline for shipment to points outside of the state in tank cars holds around 7.25 to 8.50 cents, while tank car shipments to points within the state continues at 15.50 cents, including tax on the part of the major companies. Independents sell for about 2 cents less, but have to include tax. Gasoline for export is unchanged at 6 to 7 cents, at the harbor.

Fuel oil is also unchanged, with a slightly better feeling. In tank cars, fuel oil can be bought at 65 to 70 cents a barrel, while the export price continues around 70 cents. Diesel, 27 plus, last week in one or

Purchasers, in All Fields (in Effect August 29, 1927)

OIL PRICE HANDBOOK published annually)

GULF COASTAL
Prices of The Texas Co.
(Effective March 14)

Grades A	$1.20	•Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

•Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS
Prices of Ohio Oil Co. and Midwest Refining Co.
(Salt Creek prices effective March 12)

‡Salt Creek	29-29.9	$1.14
" "	30-30.9	1.16
" "	31-31.9	1.18
" "	32-32.9	1.20
" "	33-33.9	1.22
" "	34-34.9	1.24
" "	35-35.9	1.26
" "	36-36.9	1.28
" "	37 and above	1.30
Elk Basin		1.33
Grass Creek light		1.33
Big Muddy		$1.25
Lance Creek		1.33
Rock Creek		1.25
Mule Creek		1.30
Rex Lake		1.10
‡Osage		1.33
‡Cat Creek, Mont.		1.33
Sunburst, Mont.		1.35
‡Hogback, N. Mex.		1.38
Artesia, N. Mex.		1.00

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

The Texas Co. buys Salt Creek and Big Muddy crude.

CALIFORNIA
Standard Oil Co. of California

Santa Maria and Ventura Posted by Union Oil Co.

Gravity	Signal Hill Seal Beach Huntington Beach	Inglewood Torrance	Whittier La Habra	Newhall, McKittrick, Kern River	Olinda-Brea Canon, Richfield	Athens-Rosecrans Dominguez	Montebello	Coyote Hills	Santa Fe Springs	Midway Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	$ .75	$ .85	....	$ .85	$ .85	....	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85
15-15.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
16-16.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
17-17.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
18-18.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
19-19.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
20-20.9	.85	.85	.85	....	.85	....	.85	.85	....	.77	.77	.76	.78	.85	.85
21-21.9	.86	.86	.85	....	.86	....	.85	.86	....	.79	.79	.77	.81	.85	.85
22-22.9	.87	.87	.85	....	.87	....	.85	.87	....	.81	.81	.78	.85	.85	.85
23-23.9	.88	.88	....	....	.88	....	.85	.88	....	.83	.83	.79	.89	.85	.85
24-24.9	.89	.89	....	....	.89	$ .89	.85	.89	.85	$ .85	.85	.80	.93	.85	.85
25-25.9	.90	.90	....	....	.90	.90	.86	.90	.85	.87	.87	.81	.97	.86	.86
26-26.9	.92	.92	....	....	.92	.92	.87	.91	.85	.89	.89	.83	1.01	.87	.87
27-27.9	.94	.94	....	....	.94	.94	.88	.92	.85	.91	.91	.85	1.05	.88	.88
28-28.9	.96	.96	....	....	.96	.96	.89	.93	.86	.93	.93	.87	....	.89	.89
29-29.9	.98	....	....	....	.98	.98	.90	.94	.87	.96	.96	.89	....	.91	.91
30-30.9	1.00	....	....	....	1.00	1.00	.91	.95	.88	.99	.99	.91	....	.93	.93
31-31.9	1.03	....	....	....	....	1.03	....	....	.89	1.02	1.02	.93	....	....	.95
32-32.9	1.06	....	....	....	....	1.06	....	....	.91	1.05	1.05	.95	....	....	.97
33-33.9	....	....	....	....	....	1.09	....	....	.93	1.08	1.08	.97	....	....	.99
34-34.9	....	....	....	....	....	1.12	....	....	.95	....	1.11	.99	....	....	1.01
35-35.9	....	....	....	....	....	1.15	....	....	.97	....	....	1.01	....	....	1.03
36-36.9	....	....	....	....	....	1.18	....	....	.99	....	....	....	....	....	1.06
37-37.9	....	....	....	....	....	1.21	....	....	1.01	....	....	....	....	....	1.09
38-38.9	....	....	....	....	....	1.24	....	....	1.03	....	....	....	....	....	1.12
39-39.9	....	....	....	....	....	1.27	....	....	1.06	....	....	....	....	....	1.15
40-40.9	....	....	....	....	....	1.30	....	....	1.09	....	....	....	....	....	....
41-41.9	....	....	....	....	....	1.33	....	....	1.12	....	....	....	....	....	....
42-42.9	....	....	....	....	....	1.36	....	....	1.15	....	....	....	....	....	....

•Union Oil Co. also purchases Long Beach Crude and is maintaining the same gravity and price schedule in that field as the Standard maintains in Signal Hill and Huntington Beach fields. The Union also buys and pays the same prices as the Standard in the Rosecrans-Dominguez fields, on gravities ranging from 14 degrees to and including 24.9 degrees and in Santa Fe Springs, on gravities ranging from 20 to and including 23.9 degrees.

two isolated instances, showed some weakness, although the general market held from 90 cents to $1.05 a barrel. One marketer had a little spot stuff on hand which he offered at less than 90 cents.

Preparing New Models Cuts Auto Output

CLEVELAND, Aug. 26.—Preparation for new models cut the output of automobiles in July, production of motor vehicles totaling 263,406, the lowest figure since last January. Of that number 233,425 were passenger cars and 29,981 were trucks.

In the seven months ended July 31 production of passenger cars totaled 2,012,103 compared with 2,387,424 in the first seven months of 1926. While production of Ford has been relatively low all year it has vanished in the last few months while he has been preparing his anxiously awaited new model. Other manufacturers spent July preparing new models. Increased output by some other manufacturers, General Motors in particular, has partly overcome the decline due to Ford's inactivity but it now seems improbable that the 1927 automobile output will reach last year's total of 4,219,442 passenger cars and trucks.

Truck output was smaller in July than in July, 1926, but in the first seven months total truck output was 278,574 compared with 272,847 in the corresponding time last year.

Canadian manufacture in July was 8,719 passenger cars and 2,268 trucks, a total of 10,987. Canadian production of all types of motor vehicles in the first seven months totaled 137,795 compared with 140,085 in the first seven months of 1926.

Comparative United States production figures follow:

PASSENGER CARS AND TRUCKS

	1927	1926	1925
Jan.	234,231	300,612	230,887
Feb.	298,765	354,431	374,373
Mar.	386,841	422,728	362,116
Apr.	397,777	430,523	421,993
May	395,674	417,211	406,259
June	313,983	380,372	386,887
July	263,406	354,394	387,214
7 mos.	2,290,677	2,660,271	2,469,729
Aug.	.....	422,294	250,574
Sept.	.....	393,356	319,770
Oct.	.....	329,142	436,225
Nov.	.....	250,950	364,347
Dec.	.....	163,429	308,711
Total	2,290,677	4,219,442	4,149,356

PASSENGER CARS ONLY

Jan.	196,989	272,922	205,550
Feb.	260,644	319,763	243,176
Mar.	341,676	381,116	321,200
Apr.	353,223	383,907	377,747
May	352,428	373,140	366,197
June	273,718	339,570	352,261
July	233,425	317,006	348,984
7 mos.	2,012,103	2,387,424	2,215,115
Aug.	.....	380,282	216,087
Sept.	.....	350,923	263,855
Oct.	.....	389,565	394,096
Nov.	.....	219,504	328,694
Dec.	.....	137,361	278,643
Total	2,012,103	3,765,059	3,696,490

TRUCKS ONLY

Jan.	37,242	27,690	25,337
Feb.	38,121	34,668	31,197
Mar.	45,165	41,612	40,916
Apr.	44,554	46,616	44,246
May	43,246	44,071	40,062
June	40,265	40,802	34,626
July	29,981	37,388	38,230
7 mos.	278,574	272,847	254,614
Aug.	.....	42,012	34,487
Sept.	.....	42,433	55,915
Oct.	.....	39,577	42,129
Nov.	.....	31,446	35,653
Dec.	.....	26,068	30,068
Total	278,574	454,383	452,866

OIL STOCKS AND FINANCES

National Petroleum News

Sinclair Refunds Debt and Improvements

NEW YORK, Aug. 27.—A syndicate of bankers this week offered at 99, $20,000,000 3-year first lien collateral 6 per cent gold bonds series D of Sinclair Consolidated Oil Corp. Purpose of the issue, according to Chairman Harry F. Sinclair's letter bankers, is to retire $12,350,600 Series C 6 per cent bonds, due Dec. 1, and to reimburse the corporation's treasury for capital expenditures, which since Dec. 31, 1924, have amounted to more than $50,000,000.

The Sinclair balance sheet of June 30 adjusted to take into account the new issue shows a funded debt of $92,028,000 and preferred stock amounting to $16,907,000. There was outstanding June 30 4,509,481 shares of no par common stock which was carried on the books at $204,414,529.

Operating earnings of the corporation before interest, federal taxes, and reserves for depreciation and depletion in the last five years were given by Mr. Sinclair as follows: 1922, $30,943,794; 1923, $13,436,504; 1924, $16,426,930; 1925, $28,944,647, and 1926, $43,439,509.

The new issue of bonds which will be dated Sept. 1 is to be secured by pledge of $120,516,000 face value first mortgage bonds of the Sinclair Oil & Gas Co., Sinclair Refining Co. and Sinclair Navigation Co. It is redeemable in whole or in part on 60 days' notice at 102 up to next March 1, and at ½ point less in each subsequent six-month period.

The underwriting syndicate consists of Blair & Co., Inc., Kissel, Kinnicutt & Co., J. & W. Seligman & Co., Spencer Trask & Co.; Janney & Co., and Continental & Commercial Co.

New York Bonds

Week Ending Aug. 26

	High	Low	Last	Ch'ge
American Rep. deb. 6s...	99¼	99⅛	99⅛	0
Assoc. Oil gold 6s.....	102¾	102¾	102¾	0
Atlantic Refg. deb. 5s...	102	101½	101⅞	+ ¼
Barnsdall Corp. 6s.....	100⅜	98	98	—2
Barnsdall Corp. 6s ex war	92⅛	90	90	+ ½
Cal. Petrol 5s.....	94	93¾	94	0
Cal. Petrol. 5½s.....	98⅞	97⅞	97⅞	— ⅛
Empire Gas & Fuel 7½s.	110⅜	110	110	0
Empire Gas & Fuel 6½s.	105¾	105½	105⅝	0
Gen. Asphalt 6s.....	106	106	106	—1⅜
Gen. Petroleum 5s.....	101⅞	101¼	101¾	+ ⅜
Humble Oil & Refg. 5½s	102⅝	102¼	102¼	0
Humble Oil 5s.....	99½	99¼	99½	+ ⅛
Mid-Cont. Pet. 6½s....	105	104½	104½	0
Pan-Amer. P & T 7s....	106	105⅜	105⅜	— ⅛
Pan-Amer. P & T 6s....	102⅞	102	102⅛	—1
Pan-Amer. P & T 6s....	94⅝	94	94¼	— ¼
Prod. & Refers. 8s ex-war	111½	111½	111½	0
Simms Pet. cvt. 6s.....	99	88⅝	98⅝	— ⅜
Sinclair Con. Oil Col. 7s.	100½	100⅛	100⅛	— ⅛
Sinclair Con. Oil Con. 6½s	96¾	96⅛	96⅛	— ⅛
Sinclair Con. Oil 6s.....	100½	100⅛	100⅛	0
Sinclair Crude Oil 6s....	100½	100¼	100⅜	+ ⅛
Sinclair Pipe Line sf 5s..	93	92¾	93	0
Skelly Oil 5½s.....	96¼	95	95	—1⅛
Standard Oil N. Y. 4½s.	96¼	95⅞	96	0
Standard Oil N. J. deb. 5s	103⅝	103	103½	+ ¼
Union Oil of Cal. 6s-A...	108⅝	108½	108½	+ ⅛
Union Oil of Cal. 5s-C...	98	97½	97½	—1

New York Curb Bonds

Week Ending Aug. 26

	High	Low	Last	Ch'ge
Beacon Oil 6s '36.....	101⅛	100¼	101⅛	+1
Cities Serv. 5s '66.....	91½	88¾	91¼	+1⅜
Cities Serv. 6s '66.....	101½	100½	101	+ ½
Cities Serv. Gas 5½s '42.	96¼	96¼	96¼	0
Empire Oil 5½s '42.....	96⅛	96	96	0
Galena S. O. 7s '30.....	90¼	90¼	90¼	+ ¼
General Pet. 6s '28.....	101⅛	100⅞	101	0
Gulf Oil 5s '37.....	100⅜	100	100¼	+ ¼
Indepen. Oil 6s '39.....	98⅞	98⅛	98⅞	+ ⅜
Pure Oil 5½s.....	98½	98⅛	98¼	+ ⅜
Richfield Oil 6s wi. '41....	95⅛	95	95	0
S. O. N. Y. 6½s '33.....	104⅞	104⅜	104¾	— ⅛
Sun Oil 5½s '39.....	100¾	100	100¾	+ ¼
Trans. Cont. Oil 7s '30..	117⅜	113½	113½	—3½
United Oil Prod. 8s '31..	76⅛	76⅛	76⅛	+1
Warner-Quin. 6s '42.....	93¾	93¾	93¾	0
White Eagle 5½s '57....	96¼	96	96¼	+ ¼

Southern Kansas Gas Co. Floats Bond Issue

NEW YORK, Aug. 27.—Southern Kansas Gas Co. through G. L. Ohrstrom & Co. has offered $2,500,000 first mortgage 6½ per cent sinking fund gold bonds, series of 1937, with stock purchase privilege. Offering price was 98½ to yield above 6.70. These bonds, it was announced, will be secured by a direct first mortgage on all physical properties of the Southern Kansas Gas Company, which will include gas rights subject to the customary royalties on approximately 76,100 acres of leases and gas purchase contracts on about 9,880 acres in Southeastern Kansas. The entire future gas output of this acreage is covered by these leases and contracts.

Proceeds will be used to reimburse the company in part for the cost of properties acquired. A portion of the proceeds, together with $1,000,000 sinking fund gold notes to be issued, will provide funds for extensions and improvements.

The holder of each $1,000 bond will be entitled, subject to the redemption of the bond, to purchase 10 shares of the company's no par value common stock at $5 a share to and including Aug. 1, 1929, and thereafter at prices ranging from $10 to $20 a share. Holders of $500 bonds will have a proportionate purchase privilege.

Barnsdall Corp.—Additional $3,842,400 Class A voting stock listed on official notice of issuance and authority given to list $24,871,000 additional on issuance, bringing total Class A stock listed to $53,713,400.

Union Tank Car Co. Nets $4.29 a Share

NEW YORK, Aug. 27.—Union Tank Car Co. for first half of 1927 reports net income after depreciation, interest and federal taxes totaling $1,321,201, equivalent to $4.29 a share on the 307,341 shares of $100 common stock outstanding June 30. Consolidated income statement for the six months follows:

Operating profit after depreciation	$1,707,045
Other income	161,430
Total income	$1,868,475
Interest	359,266
Federal income taxes	188,008
Net profit	$1,321,201
Dividends paid	768,350
Surplus	$ 552,851

J. A. Motter Returns From Colorado

WICHITA, Kan., Aug. 26.—J. A. Motter, secretary of the Kansas Oil Men's Association, with headquarters here, has just returned from a two weeks' vacation in Colorado. During that time Mr. Motter was viewing the Independent oil companies' business places from a tourist's standpoint and, according to the Aug. 27 bulletin of the association, he reports that some such places in Kansas and Colorado leave much to be desired in the way of cleanliness of camps and rest rooms.

One large competitor in Colorado, Mr. Motter says, is doing a very good tourist business owing to the cleanliness of his station and surroundings.

New Gasoline Company Organized

LOS ANGELES, Aug. 27.—The State Gasoline Co., with headquarters at 2501 East 28th st., Los Angeles, has been formed to operate a natural gasoline plant at Seal Beach. The plant to be operated was built for California Eastern, and has a daily capacity of about 15,000 gallons. J. W. Jameson is president of the new company, with other officers as follows: M. P. Simon, vice president and general manager; S. R. McComb, secretary-treasurer, and R. E. Hilt, assistant secretary.

Cleveland Stock Market

August 26

	Par Value	Bid	Asked	Last Sale
Canfield Oil Co.....	100	...	...	100
do pfd.....	100	100	...	100
Fred G. Clark Co.....	10	...	3	3¼
National Refining Co....	25	35	35½	35
do pfd.....	100	130	...	130
Paragon Refining Co.....	25	8⅛	9⅛	9
do pfd.....	100	86⅛	90	81

Transactions in Oil Shares on New York Stock Exchange

1926 High	1926 Low	1927 High	1927 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Aug. 27 Sales	First	High	Low	Last	Change
32⅛	24¼	37⅝	27⅝	(sh) 915,675	N.P.	Amerada Corp.	50cQ	July 30, 27	4,600	31¼	31¼	29¼	29⅞	— ⅝
74	39¾	64⅞	35⅛	(sh) 209,180	N.P.	American Republics	.....	.....	300	46¾	46¾	45¾	45¾	— 5½
59⅛	44⅝	50¾	42	$ 56,000,000	$25	Associated Oil	‡50cQ	June 25, 27	.....	.....	.....	.....	.....	.....
128⅝	97	131⅜	107	50,000,000	100	Atlantic Refining	$1Q	June 15, 27	12,200	123	125	119½	120	— 3¼
120	115½	118	115½	20,000,000	100	do pfd.	$1.75Q	Aug. 1, 27	.....	.....	.....	.....	.....	.....
33½	23½	35½	21⅝	25,000,000	25	Barnsdall Corp. A	62½cQ	July 15, 27	16,700	23⅝	23¾	†21⅝	22	0
29½	22½	32½	22	3,840,275	25	do B	62½cQ	July 15, 27	500	22	22	22	22	— 2
68⅛	29¾	32¼	21⅜	49,505,175	25	California Petroleum	25cQ	Sept. 1, 27	7,900	22¾	22⅞	21⅜	21½	— 1¼
94¼	50	96⅜	65	24,242,500	100	General Asphalt	.....	.....	10,300	69⅛	69⅛	†65	66⅜	— 3¼
140½	94⅞	144⅛	107¼	6,949,200	100	do pfd	$1.25Q	Sept. 1, 27	800	112	112	†107¼	107¼	— 5¼
72	50¼	174⅛	60⅛	25,000,000	100	Houston Oil	.....	.....	59,900	132⅞	135½	129	132	+ 1
84	19¾	32¾	17⅝	(sh) 500,000	N.P.	Independent Oil & Gas	25cQ	July 18, 27	4,100	21⅞	21⅞	20⅜	20¾	— ⅞
13¾	7¼	11⅛	7½	$ 3,280,340	$10	Indian Refining	.....	Dec. 15, 20	2,000	8	8	7⅝	7⅝	— ⅞
12½	8	10⅞	7¼	4,550,110	10	do ctfs.	.....	.....	200	8	8	8	8	— ⅜
104	90	112	99⅞	2,296,400	100	do pfd.	.....	Dec. 15, 21	.....	.....	.....	.....	.....	.....
24½	19⅛	32½	20½	(sh) 3,988,044	N.P.	Lago Oil & Transport	75cQ	Aug. 1, 27	17,200	32¼	32¼	29½	30	— 2¼
19¾	12	18⅛	11⅜	(sh) 1,135,662	N.P.	Louisiana Oil Refining	.....	.....	7,700	11¾	11¾	†11⅜	11¾	— ⅛
98	93	97	90	$ 4,000,000	$100	do pfd.	$1⅜Q	Aug. 15, 27	150	91	92	90⅜	90⅜	— 1½
28⅞	16⅛	22¾	13	(sh) 330,000	N.P.	Maracaibo Oil	.....	.....	1,000	16	16⅜	15¼	15¼	— 1¾
63¾	49¼	58½	31	(sh) 2,308,064	N.P.	Marland Oil Co.	.....	Mar. 31, 27	31,200	37⅞	38	36	36¼	— 1⅜
250	225	250	200	$ 45,942,800	$100	Mexican Petroleum	$3Q	July 20, 27	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	12,000,000	100	do pfd	$2Q	July 20, 27	.....	.....	.....	.....	.....	.....
13¾	6	9¼	3	(sh) 945,939	N.P.	Mexican Seaboard	.....	Nov. 15, 24	2,500	5	5	†3	4½	— 1
37	27⅛	39⅜	29	(sh) 1,357,800	N.P.	Mid-Continent Petroleum	75cQ	Aug. 1, 27	14,300	32⅜	32¾	30	30	— 2½
104¼	90	105	97	$ 6,718,000	$100	do pfd.	$1.75Q	Sept. 1, 27	.....	.....	.....	.....	.....	.....
2½	⅝	3¾	1⅝	24,726,130	10	Middle States	.....	July 1, 23	3,300	2⅝	2¾	2⅝	2⅝	0
1½	½	2¾	1⅛	5,074,090	...	do ctfs.	.....	.....	2,300	1¾	2	1¾	2	+ ⅛
2¼	1	1⅞	1	(sh) 3,500,000	N.P.	Pacific Oil	.....	.....	1,900	1⅜	1⅜	1⅛	1⅛	0
76½	56½	65⅞	47½	$ 48,307,400	$ 50	Pan American P. & T.	$1.50Q	July 20, 27	19,200	56	56¼	†47½	48⅜	— 8½
78⅝	56⅞	66¾	48⅜	121,096,950	50	do B	$1.50Q	July 20, 27	163,100	56⅝	56¾	†48⅜	49	— 7
46	30	37⅞	19	(sh) 400,000	N.P.	Pan American Western B.	.....	Jan. 30, 27	58,800	22	22	20½	20½	— 2½
62	4⅛	18⅞	8	(sh) 198,770	N.P.	Panhandle P. & R.	.....	.....	400	10	10	9¼	9¼	— ⅜
99⅜	51	83¾	58¾	$ 2,935,200	$100	do pfd.	.....	July 2, 23	.....	.....	.....	.....	.....	.....
57⅝	40	60¼	38	(sh) 2,406,796	N.P.	Phillips Petroleum	75cQ	July 1, 27	28,600	44⅝	45¼	42¼	42⅜	— 1¾
1⅜	½	1⅜	½	$ 29,622,925	$ 25	Pierce Oil Corp.	.....	.....	600	⅝	⅝	⅝	⅝	0
27⅜	11⅜	24	13½	15,000,000	100	do pfd.	.....	Feb. 1, 22	1,100	18¾	18¾	17	17	— 1½
7	2¼	5½	2½	(sh) 2,500,000	N.P.	Pierce Petroleum	.....	.....	8,400	4	4	3⅜	3½	— ½
20¾	11	33⅞	16¾	$ 11,467,850	$50	Producers & Refiners	.....	Sept. 15, 23	7,100	24⅞	25⅜	22⅛	22¼	— 3⅛
41¾	30¾	50	36⅞	2,845,350	50	do pfd.	.....	May 1, 25	10	....	42¾	40¾	40¾	+ ¼
31	25¼	33½	25⅝	75,929,250	25	Pure Oil Co.	‡37½cQ	Sept. 1, 27	7,500	27	27⅜	26¼	26¼	— ⅜
112¾	106	114	111⅜	13,000,000	100	do 8% pfd.	$2Q	July 1, 27	1,700	113	113	113	113	0
57⅛	47⅜	58	45½	(sh) 628,559	13.40	Royal Dutch, N. Y. shares	$1.80	Aug. 2, 27	1,300	46⅜	46⅜	45⅝	45⅞	— ⅜
40⅝	40⅜	47⅛	42⅛	(sh) 83,152	F2	Shell Transport & T	$1.45	July 22, 27	.....	.....	.....	.....	.....	.....
31	24	31¾	25	(sh) 10,000,000	N.P.	Shell Union Oil	35cQ	June 30, 27	4,800	27½	27½	26½	26⅝	— ½
114	103	111	107½	$ 18,350,400	$100	do pfd.	$1½Q	Aug. 15, 27	.....	.....	.....	.....	.....	.....
28⅝	15⅜	22¾	14¼	7,208,080	10	Simms Petroleum	.....	Apr. 1, 27	4,300	16½	16¾	15¼	15⅜	— 1
24¼	16¾	22⅜	16	(sh) 4,501.224	N.P.	Sinclair Consolidated	.....	May 31, 24	6,200	17½	17⅝	16¾	16¾	— ⅜
99½	90	103¼	97	$ 17,210,000	$100	do pfd.	$2Q	Aug. 15, 27	200	99½	99½	99½	99½	0
37⅛	26⅜	37⅜	24⅛	27,398,500	25	Skelly Oil Co.	50cQ	June 15, 27	3,900	28	28	26⅜	26⅜	— 1⅜
63⅝	52⅝	60¾	50⅜	(sh) 13,016,434	N.P.	S. O. California	‡62½cQ	June 15, 27	7,500	55	55⅛	53¾	53⅞	— 1⅝
46⅜	37⅜	41⅜	35½	$ 604,484,600	$25	S. O. New Jersey	‡25cQ	June 15, 27	22,100	39⅛	39½	38⅛	38⅛	— ¼
33¼	32½	34⅛	29¾	421,498,275	25	S. O. New York	40cQ	June 15, 27	9,300	31⅝	31¾	31⅛	31⅛	— ⅝
41⅝	30⅛	34⅞	30	(sh) 1,171,474	N.P.	Sun Oil	25cQ	June 15, 27	300	32¼	32¼	32⅛	32¼	0
.....	.....	100	99	$ 6,000,000	$100	do. pfd.	$1.50Q	Sept. 1, 27	.....	.....	.....	.....	.....	.....
5¼	1	6½	3¾	(sh) 1,121,368	N.P.	Superior Oil Corp.	.....	Dec. 20, 20	8,100	4	4	3¾	3¾	+ ⅛
57⅞	53⅛	58	45	$ 179,752,525	25	The Texas Corp.	75cQ	July 1, 27	19,000	49⅜	49¾	49	49⅜	— ½
19½	12	18⅞	12	8,380,340	10	Texas Pacific Coal & Oil	.....	Mar. 31, 27	6,100	14¼	14⅝	13¾	13¾	— ¾
39¼	37	29½	22½	(sh) 2,157,991	N.P.	Tide Water Oil Co.	20cQ	June 30, 27	.....	.....	.....	.....	.....	.....
103	87¼	89¾	86	$ 20,705,100	$100	do 5% pfd.	$1.25Q	Aug. 15, 27	200	88	88	88	88	+ ½
....	....	19⅛	15½	(sh) 4,791,410	N.P.	Tide Water Associated	15cQ	Aug. 1, 27	17,900	18	18	16½	16⅝	— 1⅜
....	....	90¾	87	$ 76,347,100	$100	do pfd. new	$1.50Q	July 1, 27	300	88	88½	88	88	— ½
5½	3	9¾	3¾	(sh) 3,742,029	N.P.	Transcontinental Oil	.....	.....	57,700	9	9¼	8⅜	8¼	— ⅛
58⅜	37¼	56½	39⅜	$ 40,741,725	$ 25	Union Oil of California	50cQ	Aug. 10, 27	6,200	44¼	44¼	42½	42½	— 1¾
120⅜	84¼	116⅛	94	30,734,000	100	Union Tank Car Co.	$1.25Q	Sept. 1, 27	300	110½	113	110½	113	+ 2
....	....	28½	24½	(sh) 239,860	N.P.	Warner Quinlan	50cQ	July 2, 27	500	24½	26	†24½	25	0
29¼	25⅛	27½	22	(sh) 490,000	N.P.	White Eagle Oil & Refining	50cQ	July 20, 27	1,000	23	23	22½	22½	— ½

*New High †New Low xEx-Dividend ‡Also extras Total Sales 634,760

Oil Dividends

	Amount	Payable	Stock of Record
Atlantic Refg. Co. q.	$1	Sept. 15	Aug. 22
California Pet. q.	25c	Sept. 1	Aug. 20
Chesebrough Mfg. q.	$1	Sept. 30	Sept. 10
Cities Service m.	½%	Oct. 1	Sept. 15
do stock m.	½%	Oct. 1	Sept. 15
do pfd. m.	½%	Oct. 1	Sept. 15
do pref. B m.	½%	Oct. 1	Sept. 15
Continental Oil q.	25c	Sept. 15	Aug. 13
Cumberland P. L. q.	$2	Sept. 15	Aug. 31
Independ. Oil & Gas q.	25c	Oct. 31	Oct. 17
National Trans. q.	25c	Sept. 15	Aug. 31
Ohio Oil q.	50c	Sept. 15	Aug. 15
do extra	25c	Sept. 15	Aug. 15
Phillips Pet. q.	75c	Oct. 1	Sept. 14
Shell Union q.	35c	Sept. 30	Sept. 6
S. W. Pa. P. L. q.	$1	Oct. 1	Sept. 15
S. O. Nebraska q.	63c	Sept. 20	Aug. 27
S. O. New Jersey q.	25c	Sept. 15	Aug. 25
do extra	12½c	Sept. 15	Aug. 25
S. O. New York q.	40c	Sept. 15	Aug. 19
S. O. Ohio q.	62½c	Oct. 1	Aug. 26
Sun Oil q.	25c	Sept. 15	Aug. 25
Texas Corp. q.	75c	Oct. 1	Sept. 9
Vacuum Oil q.	50c	Sept. 20	Aug. 31
do extra	50c	Sept. 20	Aug. 31

Humble Oil & Refining Co.—$25,000,000 10-year 5% gold debentures due April 1, 1937, listed on New York Stock Exchange.

PITTSBURGH STOCK EXCHANGE

1926 High	1926 Low	1927 High	1927 Low	Par Value	Stocks	Transactions Week Ended Aug. 26 Sales	First	High	Low	Last	Change
8½	5¾	9⅛	6⅞	$ 10	Arkansas Nat. Gas.	2,175	9¼	9¼	8⅞	9⅛	— ¼
90½	79¾	98⅝	84	100	Columbia Gas	.....	.....	.....	.....	.....	.....
101⅜	95	107	100	100	do pfd.	25	106	106	106	106	+ ¾
17	12½	15	9½	10	Devonian Oil	20	10	10	10	10	0
116½	112	116¾	115	100	Duquesne Lt. 7% pfd.	.....	.....	.....	.....	.....	.....
10	5⅛	12¼	6	N.P.	Houston Gulf Gas.	.....	.....	.....	.....	.....	.....
46	39	49½	37¼	$ 25	Lone Star Gas	7,821	48½	*49½	47⅞	47⅞	— ⅜
47⅛	33⅛	22¾	22¼	25	Ohio Fuel Corp.	.....	.....	.....	.....	.....	.....
47½	42	21⅜	21	....	do ctfs.	.....	.....	.....	.....	.....	.....
6¾	5	6	5	....	Ohio Oil & Gas	.....	.....	.....	.....	.....	.....
34	21	21	21	25	Oklahoma Nat. Gas.	.....	.....	.....	.....	.....	.....
21	19¼	23⅛	20¼	....	do ctfs.	1,995	21¼	22¼	21	22¼	+ 1
5⅜	3½	3⅞	3	5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
10	7½	8	6	10	Salt Creek Cons.	100	6½	6½	6½	6½	+ ¼
27	8	26½	17	10	Tidal Osage	135	22	24	22	24	+ 2½
45	40	43	41	N.P.	Waverly Oil Wks. "A"	.....	.....	.....	.....	.....	.....

PITTSBURGH CURB EXCHANGE

1926 High	1926 Low	1927 High	1927 Low	Par Value	Stocks	Transactions Week Ended Aug. 26 Sales	First	High	Low	Last	Change
3⅜	2½	3½	2¾	$ 5	Columbia Synd.	.....	.....	.....	.....	.....	.....
20	.06	.18	.18	5	Duquesne Oil	.....	.....	.....	.....	.....	.....
91½	85	94	88	25	Gulf Oil Corp.	400	90⅝	90⅝	90⅝	90⅝	— 1⅞
79	79	105	93	100	Houston Gulf Gas pfd	.....	.....	.....	.....	.....	.....
12	7½	10¾	6¼	N.P.	Leonard Oil & Dev.	1,000	9	9	9	9	— ⅛
30¼	29	32	31¼	$ 25	Oklahoma Gas	.....	.....	.....	.....	.....	.....
2	.15	2.70	.75	10	Omar Oil & Gas	2,200	1.15	1.15	1.10	1.10	— .05
....	....	2¼	1¾	....	Pittsburgh Oil Dev.	.....	.....	.....	.....	.....	.....
2	1¾	2¾	2¾	5	do pfd.	.....	.....	.....	.....	.....	.....
33½	20	31	22	10	Plymouth Oil	245	25	25	25	25	+ ¼
7	3	6	5	5	States Oil	.....	.....	.....	.....	.....	.....
3½	2	3⅜	1¾	1	Texon Oil & Land	100	2¼	2¼	2¼	2¼	+ ⅛
25¾	8	23¾	18	10	TidalOsage(non-vtg).	100	22½	22½	22½	22½	+ 2½

*New high †New Low xEx-Dividend

Standard Oil Stock Traded in New York

1926 High	1926 Low	1927 High	1927 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Aug. 27 Sales	First	High	Low	Last	Change
21	16⅜	21⅝	17⅝	£ 4,000,000	£ 1	Anglo-American Oil	60⅓c	May 31, 27	500	18⅝	18⅝	18½	18½	— ½
20¼	16½	20½	17⅜	.....	£ 1	do ctfs. non-voting	.....	.....	.....	.....	.....	.....	.....	.....
2¼	.75	1¼	.75	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	100	75	75	75	75	— 1
5	2¼	4¼	2½	$ 10,000,000	$ 10	do pfd.	.....	.....	.....	.....	.....	.....	.....	.....
75	65	69	50	1,000,000	25	Borne Scrymser	‡$1S.A.	Apr. 15, 27	250	65	65	63	63¾	— 1¼
59½	42	59	45	10,000,000	50	Buckeye Pipe Line	$1Q	June 15, 27	600	55½	56½	55½	56½	+ 1
82½	65	115	76½	3,000,000	25	Chesebrough Mfg.	$1Q	June 30, 27	300	110½	112	109½	109½	— 1
25⅛	17½	22⅝	16½	38,805,260	10	Continental Oil	25cQ	June 15, 27	10,500	17¾	18⅜	17¾	18	0
137	102	137	89	3,000,000	100	Cumberland Pipe Line	$2Q	June 15, 27	.....	.....	.....	.....	.....	.....
63¾	43	58½	47	5,000,000	100	Eureka Pipe Line	$1Q	Aug. 1, 27	50	54½	56	54½	56	+ 2½
32½	9¾	13½	7⅛	16,000,000	100	Galena Signal Oil	.....	June 30, 25	200	8½	8½	8½	8½	+ ½
94½	35	59¾	35	4,000,000	100	do new pfd.	.....	June 30, 26	50	36	36	36	36	— 2
97½	40	60⅛	36	2,000,000	100	do old pfd.	.....	June 30, 26	.....	.....	.....	.....	.....	.....
99⅛	52	63¾	54	73,117,577	25	Humble Oil & Refining	‡30cQ	July 1, 27	20,200	62⅞	63	61	61⅛	— 1⅜
144½	125¼	164¾	123¾	20,000,000	100	Illinois Pipe Line	$6S.A.	June 15, 27	3,150	161	*164¾	160	160	0
39¾	32½	50½	37¾	(sh) 6,491,952	N.P.	Imperial of Canada	‡25cQ	Sept. 1, 27	9,900	49	49⅜	48	48¼	— ¾
70	54¾	72½	61	$ 5,000,000	$50	Indiana Pipe Line	$1Q.	Aug. 15, 27	350	69½	71	69½	71	+ 1⅜
35¼	28¾	34⅞	28	(sh) 7,118,138	N.P.	International Petroleum	25c	June 15, 27	18,400	31¼	31⅜	30	30⅛	— ⅜
20¾	12½	17	13½	$ 6,362,500	$12½	National Transit Co.	25cQ	June 15, 27	1,000	15⅞	16	15¾	16	+ ⅛
51½	27¾	37	31¼	5,000,000	100	New York Transit	.....	July 15, 26	50	34	34	34	34	0
80¼	64	91	70	4,000,000	100	Northern Pipe Line	$3S.A.	July 1, 27	50	85	85	85	85	+ 1
67¾	55¾	64¼	52	60,000,000	25	Ohio Oil Co.	‡50cQ	June 15, 27	4,500	61¼	62	61⅛	61½	+ ¼
24¾	15	31	12	10,000,000	25	Penn Mex. Fuel	.....	May 21, 25	700	24½	24½	23½	23½	— 1
60¼	48	55½	45¾	60,000,000	25	Prairie Oil & Gas	50cQ	Aug. 31, 27	6,700	53¼	53⅜	51	51½	— 1⅞
137½	122¼	186	132	81,000,000	100	Prairie Pipe Line	$2.50Q	July 31, 27	1,550	183	183	180½	180½	— 2½
220	184½	201½	180	4,000,000	100	Solar Refining	$5S.A.	June 20. 27	10	182	182	182	182	— 3
7	21	27¼	15½	5,000,000	50	Southern Pipe Line	.....	Mar. 1, 26	300	18¼	18½	18¼	18½	+ ¼
50	34½	41½	34½	20,000,000	25	South Penn Oil	50cQ	June 30, 27	300	37	37¼	37	37	0
57	49	77	55½	3,500,000	100	South West Pa. Pipe Lines	$1Q	July 1, 27	200	75	75	75	75	+ ¼
70½	60⅛	74½	64¾	228,415,463	25	S. O. Indiana	‡62½cQ	June 15, 27	39,300	73⅛	74	71⅛	73⅞	+ 1
36½	16½	20¼	15⅝	8,000,000	25	S. O. Kansas	.....	June 16, 24	800	16⅞	17	16⅞	17	0
134⅝	108	123¾	111½	17,012,599	25	S. O. Kentucky	$1Q	June 30, 27	1,000	122¼	122¾	121⅝	122½	+ ¼
51⅛	42	49½	42	4,559,850	25	S. O. Nebraska	62cQ	June 20, 27	200	46½	46½	46	46	+ 1
672	288	863¼	73	14,000,000	25	S. O. Ohio	62½cQ	July 1, 27	1,100	86	86	81⅝	81⅝	— 2⅜
120½	116½	122	117¼	7,000,000	100	do pfd.	$1.75Q	Sept. 1, 27	10	120	120	120	120	+ ½
23	15½	18	14½	861,466	25	Swan Finch Co.	.....	Nov. 1, 19	950	15½	18	15½	18	+ 2
100⅝	90¼	134⅝	95¼	62,470,800	25	Vacuum Oil	‡50cQ	June 20 27	4,800	129	130⅜	128¾	129	+ ¼

*New high †New low xEx dividend ‡Also extras.

Warner Quinlan Co.—Substitute listing on New York Stock Exchange of 37,500 shares of common stock, no par value, on notice if issuance on concension of preferred stock. This brings amount of listed stock to 340,380 shares.

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New York Curb Market

1926 High	1926 Low	1927 High	1927 Low	Par Value	Stocks	Transactions Week Ended Aug. 27 Sales	First	High	Low	Last	Change
6¾	45	2⅛	.55	$5	Amer. Con. Oilfields	35,000	62	63	55	62	+ 3
14½	4	7½	3	N.P.	Amer. Maracaibo	1,800	3½	3½	3½	3½	0
8⅜	5⅜	9½	6⅜	$10	Arkansas Nat. Gas	2,000	9¼	9¼	9	9¼	+ ⅛
20⅛	14⅛	20⅛	15½	N.P.	Beacon Oil	.....	.....	.....	.....	.....	.....
85¼	60	27	20½	N.P.	British American	.....	.....	.....	.....	.....	.....
28⅜	9¼	28¼	14⅜	25c	Carib Syndicate(new)	3,000	20¾	21	20	20¼	— ½
.....	.....	26	16½	.....	do ctfs. of deposit	.....	.....	.....	.....	.....	.....
51	37½	58¾	40¼	$20	Cities Service	26,200	48⅝	49¾	48⅝	49¾	+ 1
92½	82¾	92¼	87	100	do pfd.	3,600	88⅝	90½	88⅝	90¼	+ 1⅝
8¾	7⅜	8½	7⅜	10	do pfd. B	300	8¼	8¼	8⅛	8¼	+ ⅛
25¼	19	29¼	22½	10	do bankers' shares	100	24¾	24¾	24¾	24¾	+ 1¾
3½	1¾	3⅛	1¾	$1	Colombia Syndicate	9,500	2½	2⅝	2⅛	2¼	— ⅛
10¼	8⅛	9½	7	10	Consolidated Royal	100	6¾	6¾	6¾	6¾	0
16	10	14⅛	9⅛	N.P.	Creole Syndicate	3,400	12½	12½	11⅞	12	+ ⅛
7⅜	1⅛	3	1	N.P.	Crown Central	600	1⅛	1⅛	1⅛	1⅛	0
8½	½	12	4¾	....	Darby Petroleum	100	6½	6½	6½	6½	0
.....	.....	11½	6	.....	do trust ctfs.	.....	.....	.....	.....	.....	.....
4	1¾	2½	1¼	N.P.	Derby Oil & Refining	.....	.....	.....	.....	.....	.....
19	13	16⅜	10	N.P.	do pfd.	.....	.....	.....	.....	.....	.....
7½	2½	3¾	1½	N.P.	Gibson Oil	4,200	1⅜	1⅜	†1½	1½	— ⅛
2	.63	1⅜	40	N.P.	Gilliland ctfs.	300	50	50	50	50	0
98	82	96½	86¼	$25	Gulf Oil Corp.	2,100	92½	92¾	90¼	90¼	— ¾
3⅜	1	2¼	1¼	N.P.	Kirby Petroleum	.....	.....	.....	.....	.....	.....
12¼	5¾	10⅞	6	N.P.	Leonard Oil & Dev.	8,300	9	9⅛	9	9	0
27	20	27½	21½	N.P.	Lion Oil & Refg.	1,300	22½	22½	†21½	21½	— 1
46	31	49½	37	$25	Lone Star Gas	2,800	48½	*49½	47¾	47¾	0
2⅜	2	2⅛	1⅛	1	Magdalena Synd.	2,100	1⅜	1½	1⅜	1⅜	0
5½	1⅜	3	1⅜	10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
1¾	1¼	1½	1	1	Mountain & Gulf	.....	.....	.....	.....	.....	.....
26	23	26⅛	22¾	10	Mountain Producers	1,600	24⅛	24¾	24⅛	24½	+ ⅜
6¾	5	5⅞	4¾	5	New Bradford	300	4¾	4¾	4¾	4¾	0
11¾	2	6¼	4	10	New England Fuel	20	5½	5½	5½	5½	+ ⅜
17	9⅛	16	9¼	1	New Mex. & Ariz.	2,800	11	11	10⅜	10⅜	— ⅝
17	8	13¼	9	25	New York Oil	2,100	12⅜	12⅜	11	11½	— ⅞
12⅛	8¾	12⅜	11	N.P.	North Cent. Texas	100	11	11	†11	11	+ ½
44¾	33	.....	.....	$25	Ohio Fuel Corp.	.....	.....	.....	.....	.....	.....
33	28½	27½	21¼	....	Okla. Nat. Gas ctfs.	.....	.....	.....	.....	.....	.....
10⅛	5⅞	9⅜	3¼	N.P.	Pandem	500	3½	3¾	3¼	3⅜	+ ⅛
12¼	11¾	12⅛	9¾	N.P.	Pantapec Oil	6,200	10¼	10⅜	9¾	9¾	— ⅜
2¾	.20	.37	.25	N.P.	Peer Oil Corp.	.....	.....	.....	.....	.....	.....
22¾	12	13½	6½	$10	Pennok Oil	.....	.....	.....	.....	.....	.....
38	14⅛	24⅜	14½	25	Red Bank Oil	400	19½	20½	19¼	20	+ ⅜
30¼	12	15½	2	N.P.	Reiter-Foster	200	4⅛	4¼	4⅛	4¼	+ ⅛
27½	22	27½	15	$25	Richfield Oil	.....	.....	.....	.....	.....	.....
7½	4½	7	4½	N.P.	Ryan Consolidated	200	6	6	6	6	— ⅛
10	7½	8	6	$10	Salt Creek Cons.	200	6½	6½	6½	6½	0
36	26⅛	32	27¼	10	Salt Creek Prod.	900	29½	29½	29	29	0
4⅜	1⅜	7	2⅜	5	Savoy Oil	.....	.....	.....	.....	.....	.....
27	7⅝	26⅛	17	10	Tidal Osage	3,800	21⅞	23⅞	21	22	+ ¾
25¾	7⅝	23¾	15	10	do non-voting	5,200	21½	23¼	20⅞	22¼	+ 1¼
.....	.....	88	63½	100	Transcontinental pfd.	300	86	86	86	86	+ 1
3	4⅛	7⅜	4¼	5	Venezuelan Petro.	16,500	5⅝	6¼	5⅝	6¼	+ ⅜
31⅛	22	32⅜	20⅜	N P.	Wilcox Oil & Gas	300	22⅜	22⅜	22⅜	22⅜	— ⅜
9½	4⅜	8	5½	$1	Woodley Petroleum	200	5½	5½	5½	5½	— ⅛

*New High †New Low xEx-Dividend

Station Gives New Money To Women Drivers

FALL RIVER, Mass., Aug. 29.—Merchandising products of petroleum for 90 years has helped the Borden & Remington Co. to incorporate several new service ideas as the super-service station which it is now building here on President Ave. and Lindsay St. The company is endeavoring to make this new station one of the most completely equipped in the country, and to include every possible service for both car and motorist.

One of the features which will interest many drivers is the fact that they will be permitted to descend into the oil pits to watch the oiling and greasing of their cars. Protective garments will be provided by the company for this purpose so that the customer's clothes will not be soiled in the pits.

A service which will appeal to women drivers is the assurance of clean bills for her purse. Most women do not like to handle nor put old and soiled bills into their purses, especially if the purse or handbag is new, because many bags have light silk linings which soil quickly. At this station new money exclusively will be given in change to all women drivers.

A completely equipped rest room with all modern conveniences for the woman driver, is another feature aimed to particularly please women.

This company, which started selling burning oils, sperm and whale oil in 1837, added gasoline and lubricating oils to its line in 1920. Five years later it built its first service station, which is operated as the Boremco station. The station now under construction will be its second.

Would Use Explosive In Oil Tank Fires

Staff Special

TULSA, Aug. 27.—A Tulsa inventor has ideas as to how to prevent boil-overs in tank fires. His plan is to throw small amounts of explosives, similar to hand grenades, into the tank, on the theory that if the burning oil is kept stirred up by these little explosions, it will not boil over. In applying for patent, one of his claims was that by continually puncturing the film that forms over the top of the burning oil, steam and vapors that help to cause the boil-over would be allowed to escape.

Although his patent probably will be granted, this particular claim was disallowed by the Patent Office, on the ground that the principle had long been in use, particularly in the pie-making industry. The Patent Office evidently thought he had a lot of crust to claim novelty for this particular idea.

THE OIL INDUSTRY EXCHANGE

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Adamson Mfg. Co.
Air Scale Co.
Alcorn Combustion Co.
Allison Coupon Co.
Aluminum Company of America
American Can Co.
American Oil Pump & Tank Co.
American Oil Works
American Radiator Co.
American Schaeffer & Budenberg Corp.
American Steel Package Co.
American Telephone and Telegraph Co.
Anderson-Prichard Oil Corp. 71
Associated Supply Co.
Association of Natural Gasoline Mfgrs.

Badger & Sons Company, E. B.
Barnickel & Co., Wm. S. 81
Barnsdall Refineries, Inc.
Battenfeld Grease & Oil Co. 12
Bennett Pumps Corp. 8–9
Berg Industrial Alcohol Co., David 85
Bessemer Gas Engine Co. 50
Best Stamp & Mfg. Co.
Bethlehem Steel Co. 54
Biggs Boiler Works Co.
Blackmer Pump Co.
Blaw-Knox Co.
Boe Mfg. Co.
Bolene Refining Co. 14
Bowser & Co., Inc., S. F.
Braun & Co., C. F.
Brown Sheet Iron & Steel Co. 100
Buckeye Boiler Co.
Buckeye Iron & Brass Works 2
Budd Wheel Co.
Buffalo Meter Co. 89
Burrell Co., G. A.
Butler Mfg. Co.
Byron, Jackson Pump Co.

Campbell, J. A. 52
Canfield Oil Co., Cleveland
Carbide & Carbon Chemical Corp.
Celite Products Co.
Central Commercial Co.
Champion Pneumatic Mach. Co.
Champion Tank & Mfg. Co.
Champlin Refining Co.
Chestnut & Smith Corp.
Chevrolet Motor Co.
Chicago Tribune
Chicago Tubing & Braiding Co.
Chipman Chemical Engineering Co., Inc.
Cincinnati Advertising Products Co.
Clark Bros. Co. 66–67
Clark Co., Fred G. 16
Classified Advertising Section 111
Clear Vision Pump Co. 76
Cleveland Steel Barrel Co.
Continental Ref. Co. 100
Continental Supply Co.
Correct Measure Co.
Crown Central Petroleum Corp.
Curtis Pneumatic Machinery Co.
Cushing Refg. & Gasoline Co. 74

Daugherty & Son Rfg. Co., W. H. 59
Davis Welding & Mfg. Co. Inside Back Cover
Dayton Air Compressors
Dayton Pump & Mfg. Co. 7
Dearborn Chemical Co.
Deepwater Oil Refineries
Dibb Mfg. Co. Inc.
Diebold Safe and Lock Co.
Dopp Company, H. W.
Draper Mfg. Co.
Dunn Manufacturing Co. 65
Dunning Compressor Co.

Eaton, J. E.
Edwards Mfg. Co. 54
Ejecto Co.
Elk Refining Co.
Emerson-Scheuring Tank Co.
Empire Oil Works, Inc. 72
Empire Refineries, Inc.
Enameled Steel Sign Co.
Erie Meter Systems, Inc.
Ethyl Gasoline Corp.

Farrell Mfg. Co.
Federal Motor Truck Co.
Fisk Tire Co., The
Fiske Bros. Refg. Co.
Flexlume Corp.
Foamite-Childs Corp. 5
Fogarty Mfg. Co., The
Foster Wheeler Corp.
Foxboro Co., Inc.
Franklin Creek Refg. Co. 59
Freedom Oil Works
Frontier Mfg. Co.
Fry Equipment Corp. Back Cover, 86

Galena Signal Oil Co.
Gasoline Register Co.
General American Tank Car Corp.
General Insulating & Mfg. Co. 37
Gilbert & Barker Mfg. Co. 4
Globe Mfg. Co.
Globe Oil & Refg. Co.
Gomory, W. L.
Graham Brothers
Graver Corp. 98
Gray Processes Corp. 29
Gulf Ref. Co. 62
Gustafson Bros. Oil Co.

Hardie Mfg. Co.
Hartol Products Corp. 91
Hayes Equipment Mfg. Co.
Haynes Stellite Co.
Heil Co., The 88
Heine Boiler Co.
Highland Body Mfg. Co.
Hope Engineering & Supply Co.
Hotel Gibson
Hughes Tool Co. 73
Hull Sign & Mfg. Co.
Humble Oil & Refining Co.
Huntley & Huntley 61
Hurt Engineering Corp., G. F.

Illinois Glass Co.
Imperial Oil Marketing Co. 45
Independent Oil & Gas Co.
Indiana Truck Corp.
Ingersoll-Rand Co.
International Derrick & Equip. Co.
International Harvester Co. 39
International Petroleum Exposition
Irving-Iron Works Co.

Jenkins Bros.
Johns-Manville Corp.
Julian Pump Co.

Kanotex Ref. Co. 89
Keen & Woolf Oil Co.
Kellogg Co., M. W. Insert
Kellogg Mfg. Co.
Kellom Co., Inc., Chas. F.
Kewanee Safe Co.
Klean-Rite Auto Laundry Co.

Larkin Automotive Parts Co.
Larkin-Thuro Corp.
Leader Iron Works
Lewis-Shepard Co.
Lientz & Co., B. P.
Linde Air Products Co. 1
Lubricating Appliance Mfg. Co.
Luce Trunk Co. 93
Lummus Co., The Walter E.

Marion Machine, Foundry & Supply Co. 62
Marland Refg. Co.
Marnall Steel Co.
Martin & Schwartz, Inc.
Marvel Equipment Co.
McDonald Mfg. Co., A. Y. 79
McKee & Co., Arthur G.
Merco Nordstrom Valve Co.
Merit Oil Equipment Co.
Metal Hose & Tubing Co. 56–82–83
Metric Metal Works
Mid-Continent Petroleum Corp.
Milestone Meters Inc.
Miller Sons Co., A. D.
Milwaukee Tank Works 90
Moore & Co., Lee C.
Moore & Kling Inc.
Morrison Bros.
Moto-Service Elevator Co.

National Carbon Co., Inc.
National Checking Co.
National Lead Co. 11
National Oil Products Co
National Petroleum News 10–59–92
National Pipe Products Corp.
National Recording Pump Co. Inside Front Cover
National Refining Co. 93
National Transit Pump & Machine Co. 68
Neil & Co., Wm. 78
Neil House, The
New York Lubricating Oil Co.
Niece Petroleum Co.
Niles Steel Products Co.
North American Car Corp.

Oakite Products, Inc. 57
Oil Conservation Engineering Co.
Oil Grease Pump Co., The
Oil Products Appliance Co.
Oil Well Supply Co.
Omar Refining Co.

Oxweld Acetylene Co.
Paasche Airbrush Co. 85
Patriot Mfg. Co.
Peerless Stove & Mfg. Co.
Pennsylvania Flexible Metallic Tubing Co.
Pennsylvania Pump Co., Inc.
Pennsylvania Refg. Co.
Perfection Mfg. Co.
Petroleum Iron Works Co. 53
Pforzheimer & Co., Carl H. 110
Phillips Petroleum Co.
Pittsburgh-Des Moines Steel Co.
Pittsburgh Machine Tool Co.
Platt Co., W. C. 102
Powerine Co., The
Pressed Steel Tank Co. 13
Prest-O-Lite Co.
Producers & Refiners Corp.
Professional Card Section 61
Pure Oil Co. 6
Pyrene Mfg. Co.

Quincy Compressor Co.

Rand McNally & Co.
Reading Iron Co.
Reading Steel Castings Co., Inc.
Reid Gas Engine Co., Jos.
Rhodes Co., Jay B. 87
Roper Corp., Geo. D.
Roxana Petroleum Corp.

St. Louis Can Co.
St. Louis Pump & Equip. Co.
St. Louis Surfacer & Paint Co.
Safety Lift Co.
Sargent Engineering Corp.
Schrayer & Co., Robert M.
Selden Truck Corp. 63
Service Station Equip. Co.
Shaffer Tool Works 52
Sharpsville Boiler Works Co.
Shaw, S. F. 61
Shotwell Pump & Tank Co.
Sinclair Refining Co. 96
Sindel, A. T. 57
Sistersville Tank & Boiler Works
Skelly Oil Co. 3
Smith Corp., A. O.
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Sonneborn Sons, Inc., L. 59
Southwestern Engineering Corp.
Spears & Riddle Co.
Standard Boiler & Plate Iron
Standard Lift Co.
Standard Liquid Testing Devices, Inc.
Steel Drum Accessories Corp.
Stevens Grease & Oil Co., A. J. 87
Suender, W. Frederick
Sun Oil Company

Tagliabue Mfg. Co., C. J.
Taylor Instrument Companies
Texas Company, The 60
Texas Pacific Coal & Oil Co. 30
Tidal Refining Co. 84
Tokheim Oil Tank & Pump Co. 75
Transcontinental Oil Co.
Truscon Steel Co.

Union Metal Mfg. Co.
United Filters Corp. 54
U. S. Air Compressor Co.
United States Can Co., The
United States Cast Iron Pipe & Foundry Co.
Universal Oil Products Co. 33

Vacuum Oil Co. 76
Viking Pump Co.
Vilter Mfg. Co. 61
Vogt Machine Co., Henry 55
Volcker Mfg. Co.

Wackman Welded Ware Co.
Wadhams Oil Co.
Walworth Co.
Warren Refining & Chemical Co.
Waukesha Motor Co.
Wayne Co.
Westcott & Greis, Inc. 26
West Coast Lumber Bureau
Wheaton Brass Works, A. W. 25
Wheeling Steel Corp.
White Co.
White Oak Refg. Co.
Widdell Engineering Co., Inc.
Williams Sealing Corp. 15
Willock Oil Corp. 90
Wilson Welder & Metals Co., Inc.

Youngstown Welding Co., The